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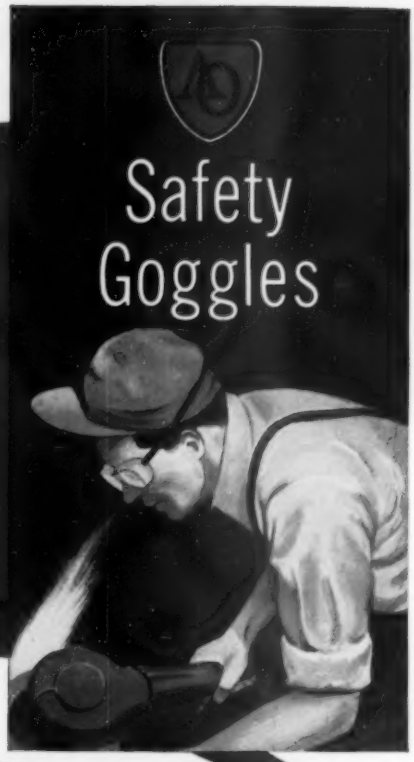

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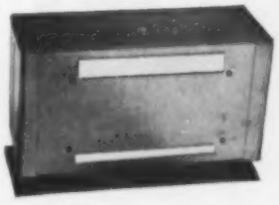

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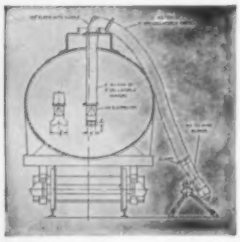

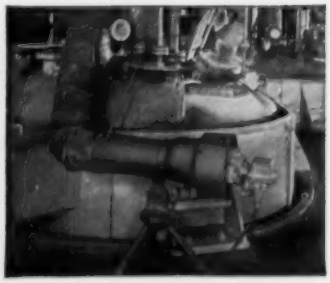

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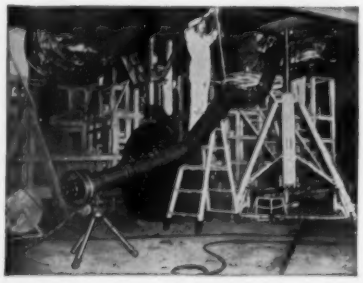
Vano Design "A" Ventilator supplying fresh air to men working in wing compartments, fuselages, etc.



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The Magazine of Safety

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EST. 1901

VOL. 103, NO. 6 JUNE, 1952

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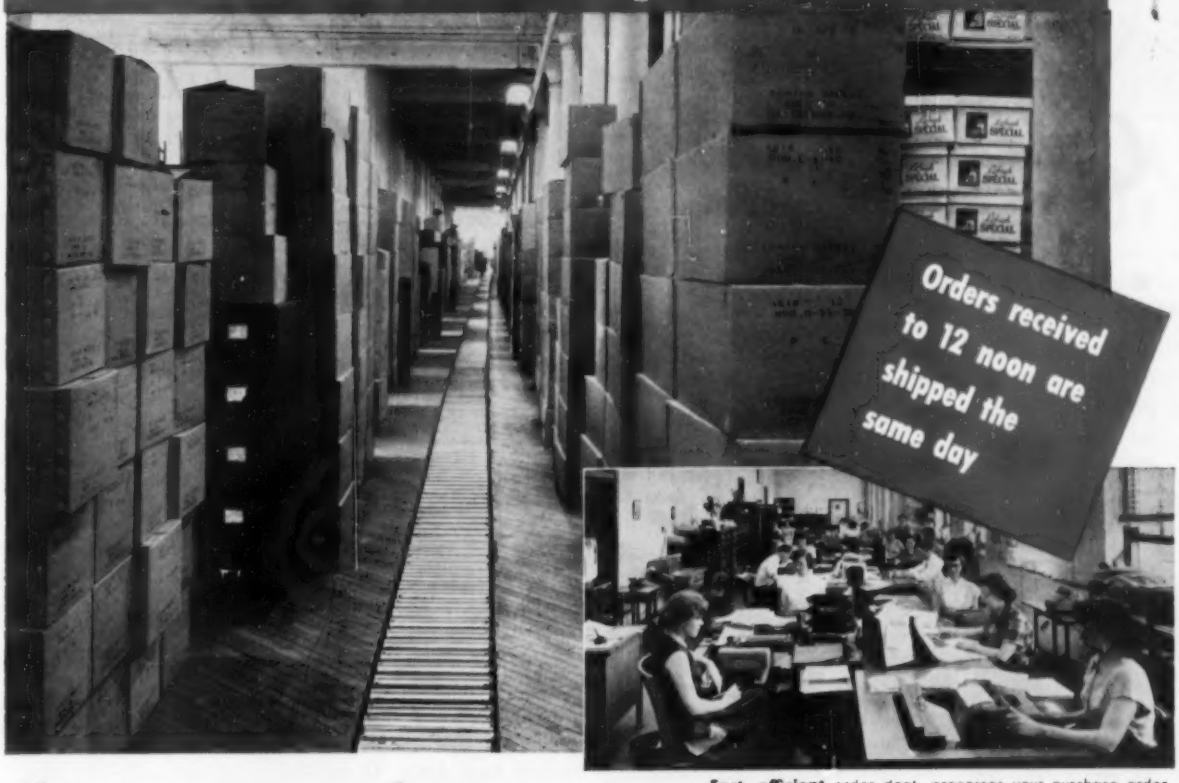

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It's Safe to Say

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★ MORE OR LESS CONVENIENT

IT MAY be convenient to have an alibi, but convenience, or rather, "inconvenience" is a weak excuse for not using the safety equipment provided. Complaints by employees that protective clothing or guards are "inconvenient" or "uncomfortable" have been voiced since the beginning of the safety movement. These opinions are still heard today, and in all likelihood will continue to be in the future.

In strict fairness, it must be admitted that, from the subjective point of view of the wearer of protective equipment, his complaints often do have a real basis in fact. Other types of equipment are heavy, hot, uncomfortable or inconvenient. As new and better products continue to issue from the research laboratories, however, the industrial worker will find that much safety equipment can no longer be put in the uncomfortable class. Manufacturers of safety clothing and equipment have been quick to grasp the significance of new chemical and processing developments and have applied these innovations to the problems of shielding the worker from industrial hazards. Of particular interest has been the decrease in weight and bulk of goggles, hats, and clothing—a fact which should lead to a less grudging acceptance by the worker.

In spite of the advances already made, there are still many areas of industrial activity where the worker must continue to wear heavy and inconvenient types of protection. The heart of the matter is, however, that at no time in the past, present, or future is the excuse that protective equipment is inconvenient or uncomfortable a valid reason for not using the equipment. It may be inconvenient to wear safety goggles today, but will it be more convenient to be fitted with an artificial eye tomorrow or spend the rest of one's life in total darkness? If rubber gloves and aprons are uncomfortable and hot, will acid burns be soothing and cool? If a guard seems to slow up a worker's output, will he be able to increase his production with a couple of fingers gone or a whole hand missing? If it is inconvenient to clean up an oil spill, will it be any more convenient to do it from a hospital bed?

Employees, however, are not the only offenders in using such invalid excuses. If we substitute the word "inefficient" for "inconvenient," the alibi will sound like that of an unprogressive management that thinks only in terms of today's output instead of long-run production. Hazards will not disappear just because either management or labor views the scene through rose-tinted lenses. It may be short-sighted of the employee to gamble today's convenience for tomorrow's by ignoring safety equipment, but it is more tragic still if that safety equipment is not even made available to him. The convenient way is, in the long run, the safe way; and the efficient way too is the safe way.

★ THE PRESIDENT'S SAFETY CONFERENCE

THERE were 140,000 full-time ghost workers in American industry during 1951.

They were ghost workers because their productive output never materialized. This figure of 140,000 represents the amount of production that was lost during the year because of industrial accidents. Stated in another way: if industrial injuries had not deprived 2,100,000 workers of their ability to produce, there would have been 42 million more man-days for the output of goods to boost both the civilian economy and the defense program.

This is the problem faced by the country as a whole, and it is to find a solution to this problem that the President of the United States has again called industrial and safety leaders to a Conference on Industrial Safety, now being held in Washington under the U. S. Department of Labor. This meeting once again emphasizes the fact that the welfare of the individual is basic to the national good—a concept typical of our form of government and way of life.

Progress was being made in reducing the accident toll in manufacturing plants since the President's Conferences were first organized in 1948. With the outbreak of hostilities in Korea and the expansion of defense production, however, accidents have again cast a menacing and lengthening shadow across the industrial scene. The 1952 Conference is accenting the great need for conserving manpower and production facilities for the defense program, and is calling on management, labor and the state governments to lend all possible assistance in the fight against the inflationary trend of accidents.

In comparison with other countries, the danger of subversive activities by a Fifth Column seems impotent. Our country is, however, being menaced, and menaced now, from another direction. This present danger has nothing to do with foreign powers. It is a Sixth Column of saboteurs, the intangible but very real ghost workers representing industrial accidents. R.P.E.

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by
Watchful Dan
The Safety Man

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"He's got his goggles off, boys! Let's get him!" That's the headline. And its uttered by a flock of deadly metal chips flying toward a careless worker's eyes. (See cut.)

Then the ad begins, "Every year approximately 100,000 industrial workers suffer disabling eye injuries."

I know why Aetna's concerned—and so do you. Aetna, and the hundreds of other good casualty companies that serve American industry lost millions last year on workmen's compensation. Accidents are on the increase. So rates are on the increase.

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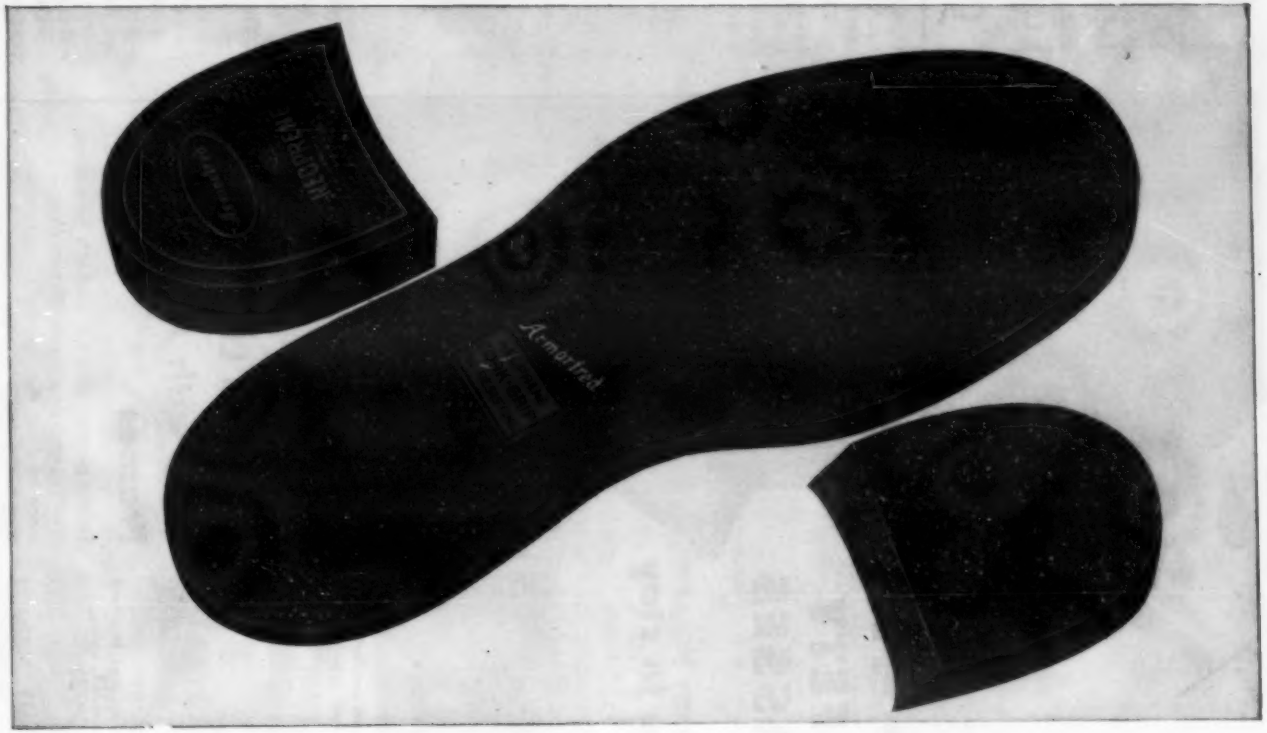

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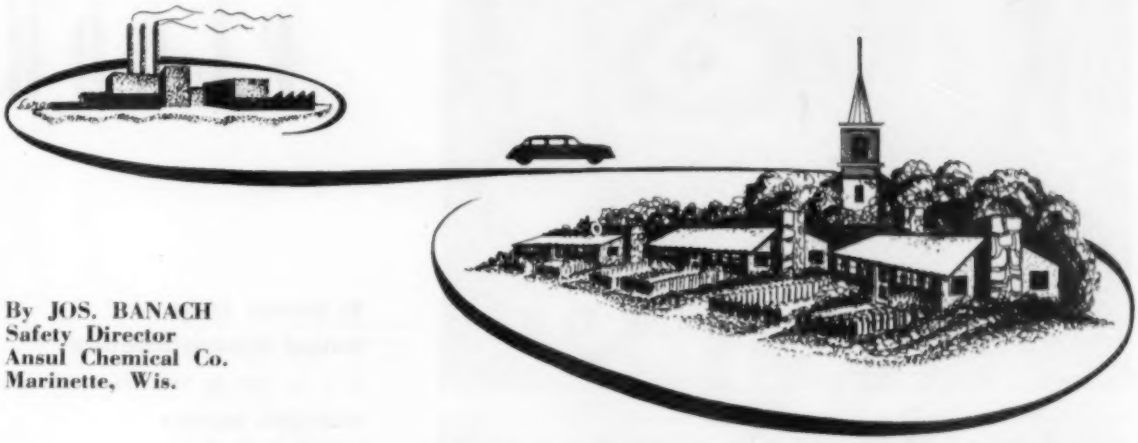
VOL. 103, No. 6 • JUNE, 1952

INDUSTRY PROFITS



By JOS. BANACH
Safety Director
Ansul Chemical Co.
Marinette, Wis.

FROM OFF-THE-JOB SAFETY

The expanding domain of the industrial safety engineer now encompasses the highway, home and community as well as the plant—or at least it should—for such public service is profitable to industry and strengthens its own safety program.

MANY safety engineers have been inclined to leave their responsibilities at the plant's door, and forget about them until the next morning. Safety Engineering, however, is an emerging profession with professional responsibilities to the individual, the industry, and the community.

Today, more than ever, the safety engineer should extend his services beyond the scope of the company or industry with which he is identified. He should do his utmost to provide and inspire an all-around safety program which will be a part of the lives of everyone in the community in which he lives.

Being a safety engineer is much more than a job—it is a responsibility. So much so, in fact, that as a result of decisions already reached by certain institutions of higher learning, Safety Engineering has emerged as a profession. All who have done so much to plan and provide the foundation upon which this new profession will be dignified can feel a just but humble pride in the recognition accorded their work by leading universities.

Standing now on the threshold of a new recognition, it is imperative that we, as safety engineers, carefully and critically evaluate ourselves in relation to the overall responsibilities of our chosen vocation. We must view and review the knowledge of our work, and, in addition, search and develop even better applications of the principles of Safety Engineering in all phases of human behavior.

Management's O.K. Essential

To make a community program completely successful, it must be remembered that:

1. The success of a community program will depend to a great degree on the complete cooperation of management.
2. Management must be willing to render a community service for the benefit of the entire community. He must want to be a good citizen.

To obtain the full cooperation of management in any undertaking which to the unenlightened might seem somewhat irregular or perhaps, beyond the scope of the safety engineer, it is important to prepare a presentation in an organized manner. For example, we know management will invest in profits; therefore, the presentation of safety plans or programs on a community basis must tell a profit story. We must think in terms of benefits which will appeal to management and to the overall operation of the business.

Brotherly love is a wonderful thing as a topic of conversation but unless it shows up on the right side of the ledger, we can never hope to

(Continued on page 51)

For information on floor maintenance products & equipment, see pages 321–345 of "Best's Safety & Maintenance Directory," 1952–1953 Edition.

ANTI-SLIP FLOOR

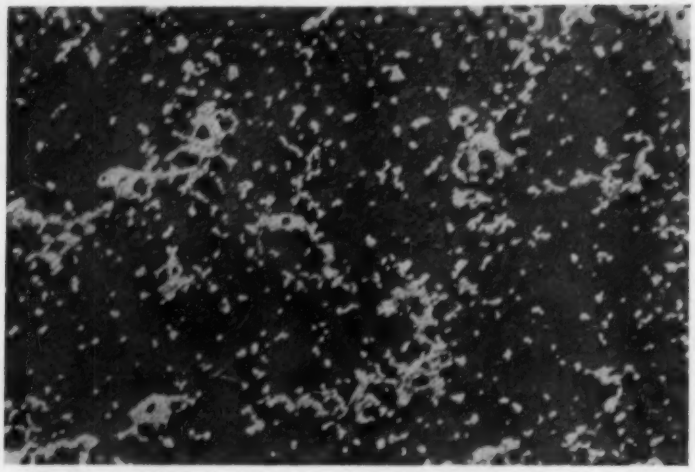


Figure 1. A photograph of colloidal silica particles magnified 25,000 times by an electron microscope with a gold shadow casting technique. The sample was dried down from a dilute solution and a minute quantity of gold evaporated onto the particles from an angle of 15 degrees. When the electron beam is shot down vertically, shadow definition is obtained.

By MICHAEL SVEDA
Grasselli Chemicals Department
E. I. du Pont de Nemours & Co., Inc.
Wilmington, Delaware

CURRENT attention of the wax industry and wax consumers is focused on water emulsion floor waxes having a new and important type of anti-slip property. A unique inorganic product, a clear colloidal silica, has made it possible for the first time to achieve excellent skid resistance without the usual attendant softening of the film. These waxes give hard films under foot. They are the result of a pioneering approach to the old problem of making floor waxes harder yet safer. Many research and production men teamed up to solve the manifold problems which must always accompany the successful development of a new idea. As a result, harder and safer floor waxes built around colloidal silica are now in wide use, giving extra safety to the public in walking—in offices, schools, hospitals, and public buildings of all types.

A description has been given elsewhere of the development of this new colloidal silica for floor waxes.[1] The following remarks about the new colloidal silica are based on the type developed by du Pont, which is, of course, the type with which I am most familiar.

As a result of the current emphasis on the promotion of these new waxes, the present paper summarizes the following aspects:

(1) The nature of this colloidal silica;

(2) How it is used in wax formulations;

(3) The performance characteristics of these new improved floor waxes;

(4) Some marketing aspects of this new development.

FEATURE

This is the third of three feature articles on Plant Maintenance. The first two articles appeared in the April and May issues of SAFETY MAINTENANCE & PRODUCTION.

What Is Clear Colloidal Silica?

Clear colloidal silica is a water solution containing 30% colloidal silica in an extremely finely divided form. It is a new product made by an ion-exchange process, starting with commercial silicate of soda (water glass) as the raw material. In a sense, silicate of soda is a mixture of soda and silica particles, completely dissolved in water. Such particles are called ions. Chemists have developed processes for separating one type of ion from another in solution. One such process is called ion-exchange, and is used as a step to convert water glass to the clear colloidal silica.

The particles of colloidal silica produced by this process are spherical. They are so small, however, that they cannot be seen through an ordinary microscope. Magnification of 25,000 times by means of an electron microscope establishes the spherical nature of the particles (Fig. 1). To get some idea of how extremely small these particles are, magnifying these colloidal silica particles by 500,000 times would

1 Michael Sveda, "New Silica for Floor Wax," *Soap and Sanitary Chemicals*, Issues of July and August, 1949.

One of the newest developments for safer footing is the use of colloidal silica in floor waxes. Here's . . . what it is, and how it works.

WAXES

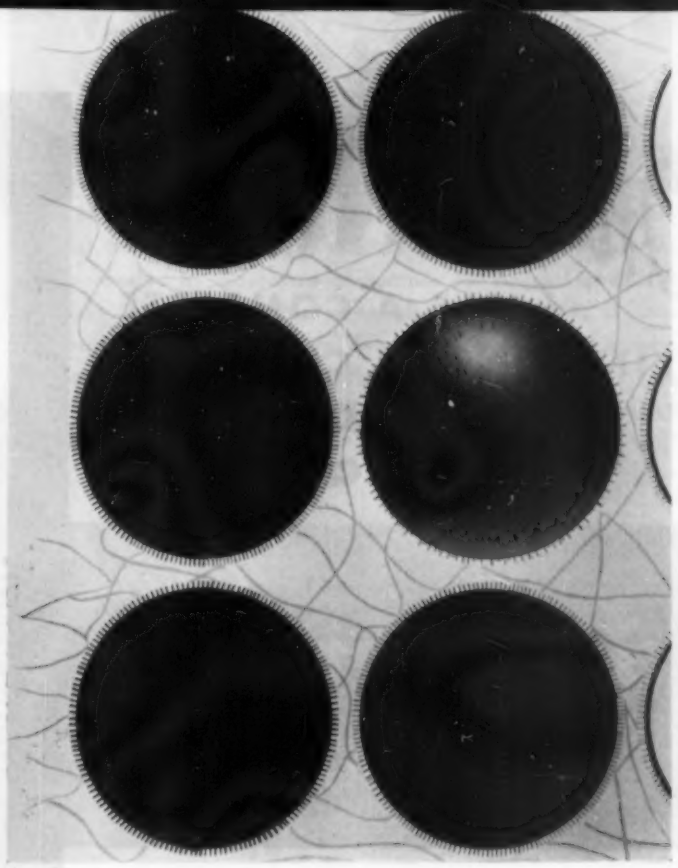


Figure 2. A diagram of conventional wax magnified shows the spherical wax micelles with the emulsifying agent sticking out like toothpicks imbedded in the spheres and the water-dispersible resin appears as cobwebs in the spaces between the globules of wax.

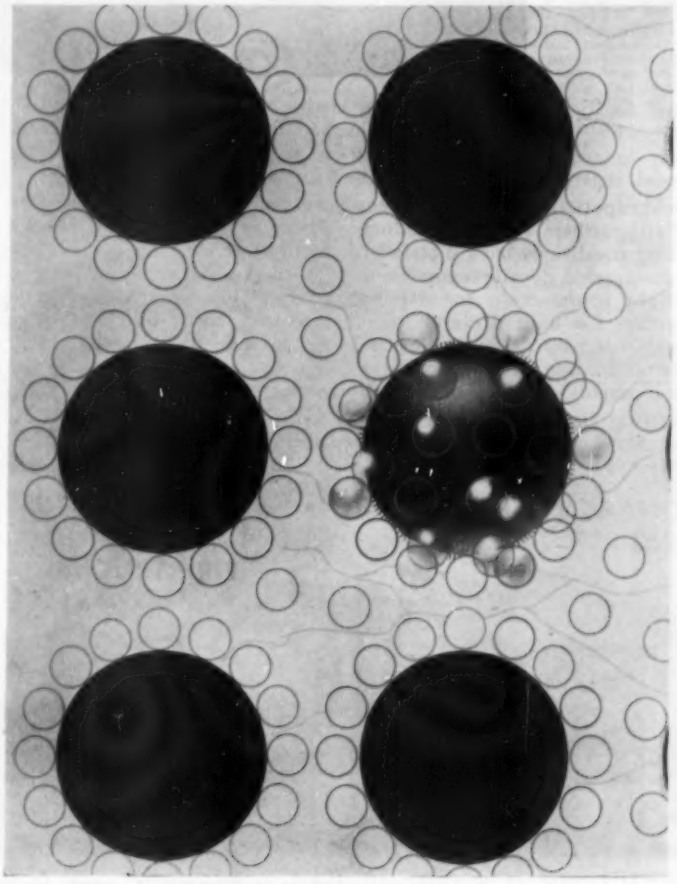


Figure 3. A diagrammatic magnification of a conventional wax to which colloidal silica has been added. The colloidal silica particles appear as transparent marbles surrounding the darker wax spheres. Pressure of foot pushes the harder particles of colloidal silica into the softer particles of wax.

give clear transparent marbles about ¼ inch in diameter.

This Colloidal Silica Is Not Abrasive

It is often asked, "How is it possible to add a hard material such as silica, which is normally thought to be abrasive, to floor waxes and then have no abrasive action on the floor?"

The answer is that the word silica actually has two chemical meanings. One represents the familiar granules of ordinary sand, or the hard, sharp materials made from sand by *grinding*. In sand, the individual atoms of silicon and oxygen making up the granule are lined up in definite patterns, much like the bricks in the wall of a building. If the sand is broken *(To page 38)*

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• TRUCK MOUNTS, TRAILERS AND FIRE TRUCKS

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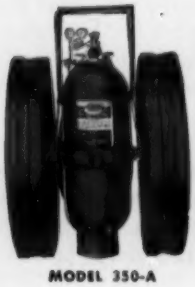
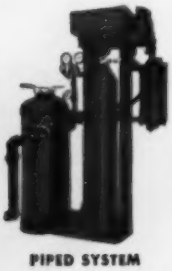


MODEL 350-A

MODEL 2000-B



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Ansul Dry Chemical Fire Extinguishers are listed and approved by the Underwriters' Laboratories, Inc. and Factory Mutual Laboratories for flammable liquid (Class B) and electrical (Class C) fires. Certain models carry U. S. Coast Guard approval for marine fire protection. They are also recommended by insurance companies for control of surface fires in textile lint and paper dusts. Thousands of Ansul Extinguishers are used by petroleum producers, pipeline companies and public utilities for protection against fires in propane, butane, natural gas, illuminating gas, etc.

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NEW TRENDS in RUBBER & PLASTIC CLOTHING

If you're still using 1940 protective clothing for 1952 workers, this survey of the tremendous strides made in materials suitable for liquid hazards will bring you up to date.

By D. F. WEST
Product Line Manager
Mine Safety Appliances Co.

Rubber glove. Curved finger style.

NOT too many years ago, when preparing an article on this subject, an author could confine his remarks principally to rubber clothing. However, in the past ten years the use of plastic for personal protective equipment has increased with such rapidity that today, except in certain special fields, plastics must be counted as one of the leading safety clothing materials.

Where formerly only simple garments, such as aprons and sleeve were available, today we find specific items tailored for practically every external body hazard. Safety clothing is no longer an afterthought, secured after job hazards and injuries have made its necessity painfully obvious. Progressive managements now plan for the proper safety clothing when setting up jobs, in much the same manner as lighting, ventilation, and machine guards are provided for.

More and more attention is being paid to the styling of protective clothing, a trend in which we still lag behind European countries. As more women are added to the work force, this trend will become more pronounced. A trimly styled protective garment will be accepted by workers many times more readily than the shapeless, bulky garments formerly available. Management has found that the mere purchase of safety clothing does not guarantee that it will be worn. The present emphasis on better design should minimize this problem.

Disposable hood, coverall and shoe covers of unsupported plastic suitable for the personnel in Civilian Defense Units.

Acid hood of unsupported plastic. It is available with or without an air supply.

The major purpose of rubber or plastic clothing is the protection of the wearer from liquid splash. The liquid may be acid, caustic, any number of chemical compounds, or just plain water. Auxiliary uses are

FEATURE

This is the second of a series of three feature articles on Protective Clothing. The next story of the series will appear in the July issue of SAFETY MAINTENANCE & PRODUCTION.

Plastic coated work gloves. Shown are three styles (left to right) safety cuff, knit wrist and gauntlet. In the picture at right, plastic coated work gloves are being tested. Red fuming nitric acid failed to cause any damage other than a slight softening of the vinyl plastic coating. When hydrogen peroxide (90%) was applied, it caused neither damage nor discoloration of the material.

For detailed descriptions of protective clothing, see pages 87–242, "Best's Safety & Maintenance Directory," 1952–53 Edition.

Rubber suit for acid workers. The gloves and boots are integral part of the suit.

the protection against dusts, abrasion, and electric shock. The latter, incidentally, is a field in which rubber still holds sway, with linemen's gloves and protectors being made of rubber which conforms to the most stringent specifications.

Types of Materials

The basic rubber and plastic safety clothing materials may be divided as follows:

1. **Unsupported plastic.** Plastic in sheet form, not combined or backed with any other material.
2. **Supported plastic.** Plastic film backed by another material. This material may be cotton duck, plastic woven in cloth form, glass cloth, or any number of materials.
3. **Natural rubber.**
4. **Synthetic rubber.**
5. **Materials coated with natural or synthetic rubber.**
6. **Impregnated fabric.** Materials of this type have the plastic intermixed with the fibers of the fabric, rather than coated on the surface.

In Chart I is outlined a brief comparison of *(To page 55)*

CHART I

	Natural Rubber	Synthetic Rubber	Plastic
Acids	Good	Good	Excellent
Oils	Poor	Fair	Excellent
Kerosene-Gasoline	Poor	Fair	Good
Ketones	Poor	Poor	Poor
Carbon Tetrachloride	Poor	Poor	Fair
Plating Solutions	Good	Good	Excellent
Pickling Baths	Good	Good	Excellent
Abrasion	Good	Fair	Excellent
Aging	Good	Good	Excellent
Sunlight	Fair	Good	Excellent
Snag Resistance	Fair	Good	Good
Heat	Good	Good	Good
Water Absorption	Fair	Good	Excellent

The New Method of Resuscitation

Recent investigations of manual methods of artificial respiration has brought about wide acceptance of the new back-pressure arm-lift technique.

How to Apply the New Method

In the back-pressure arm-lift method, the victim is placed face down with the elbows bent and with one hand upon the other. The cheek is placed on the hand, with the face turned slightly to one side. The operator then kneels on one knee at the head of the victim.

To start the cycle, the operator places his hands on the victim's back so that the thumbs just touch and the heels of the hands are just below a line running between the armpits.

He then rocks forward slowly, keeping the elbows straight, until his arms are approximately vertical, exerting steady pressure upon chest.

In the third part of the cycle, the operator rocks backward, at the same time slowly sliding his hands to the victim's arms just above the elbows.

Continuing to rock backward, he raises the arms until resistance and tension are felt at the victim's shoulders. Then he drops the arms and thus completes a full cycle. The cycles are repeated 12 times per minute, the expansion and compression phases being of equal length, and the release periods of minimum duration.

AN IMPROVED method of artificial respiration, known as the back-pressure arm-lift has been adopted by the American National Red Cross, the armed services, several industrial firms, and other agencies and organizations.

Used in Norway, Denmark, and other European countries for many years, the method permits greater exchanges of air and can be administered without undue fatigue to the operator.

Research leading to the change in method predates World War II, when investigators first doubted the superiority of the prone pressure method. Since that time the Red Cross has conducted extensive studies in the fields of respiration and asphyxia. The armed forces became intensely interested in artificial respiration in connection with the possibility of poison gas or nerve gas warfare. About two years ago the Army Chemical Corps assigned four research teams to study comparative values of various methods.

The results of the research showed that the prone pressure method was less effective in the amount of air exchanged. It compresses the chest but does not actively expand it. However, in the two-phase methods—such as the back-pressure arm-lift, the hip-lift,* and the Silvester—the chest is actively expanded and compressed by the rescuer.

Research also showed that the hip-lift back-pressure method and the hip-roll back-pressure method are more difficult to perform and cannot be done at all by frail rescuers on heavy victims. The Silvester method, for which the victim is placed on his back, was considered

* The hip-lift method was described in an article "First and Second Aids to Life-Saving" in the March, 1951 issue of SAFETY MAINTENANCE & PRODUCTION.

This is the first of three feature articles concerned with First Aid. The next two articles of the series will be published in the July and August issues of SAFETY MAINTENANCE & PRODUCTION.

unsatisfactory for use by the general public since it is difficult to keep the air passages open.

The back-pressure arm-lift method was recommended because it does not tire the rescuer unduly, can be performed by a small person on a heavy victim, and is relatively easy to teach.

This evidence was presented at a meeting of 18 agencies and organizations, called by the National Research Council at the request of the Red Cross and the Public Health Service of the Federal Security Agency. Since that meeting, when the Research Council recommended the back-pressure arm-lift method as preferable, the following agencies have adopted the new method: the armed forces, American Telephone and Telegraph Co., Bureau of Mines, Boy Scouts of America, Camp Fire Girls, Inc., Council on Physical Medicine and Rehabilitation of the American Medical Association, Federal Civil Defense Administration, Girl Scouts of the U.S.A., Public Health Service of the Federal Security Agency, the Red Cross, and the YMCA. Other agencies, industrial corporations, fire and police departments, and the like may adopt the method shortly.

The Red Cross will include the new method in first aid and life saving courses as soon as possible. Three million supplements on the new system are being printed for inclusion in its first aid and water safety textbooks. The supplement will be available through Red Cross chapters at no charge.

The Red Cross pointed out that

For detailed descriptions of mechanical resuscitation equipment, see pages 243–261, "Best's Safety & Maintenance Directory" 1952 Edition.

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because of the widespread teaching program, the changeover cannot be accomplished immediately. Millions of persons already trained in the prone pressure method, which has saved many lives, should continue to use it until they have received training in the new method.

Technique of the New Method

The victim is placed face down in a prone position with arms overhead and bent at the elbows, one hand upon the other, and the head turned to one side so that the cheek rests on the hands. The rescuer, on one or both knees at the victim's head, places his hands on the victim's back, with thumbs just touching and the heels of the hands just below a line running between the victim's armpits. The rescuer rocks forward slowly, elbows straight, until his arms are almost vertical—exerting steady pressure upon the back. Next, the rescuer rocks backward slowly and slides his hands to the victim's arms, just above the elbows, which are raised until resistance is felt at the victim's shoulders—then, the arms are dropped. This completes a full cycle, which is repeated 12 times a minute.

Mechanical Resuscitators

While the new back-pressure arm-lift method of artificial respiration has definite advantages over previous manual methods, it should be emphasized that it too is only a first aid measure. As in the past, a mechanical resuscitator should be brought to the scene and used on the victim at the earliest possible moment. Resuscitation equipment is the most successful and efficient method of restoring the breathing function. All rescue teams, fire squads, industrial and recreational organizations should be equipped with this vital life-restoring device, and have personnel trained in its use. Although resuscitators are easy to operate, the time to learn how they work is not at a moment of crisis. Instead of fumbling around with instruction cards, the operator should be able to apply the equipment quickly and accurately.

Even with mechanical resuscitators available, however, a thorough knowledge of a manual method, such as the back-pressure arm-lift, is essential. There is always a certain amount of delay in getting resuscitation equipment to the particular spot where it is needed. In life-saving, any delay may determine the final result on the side of tragedy. In short, a manual method must be applied immediately and until the mechanical equipment arrives. Unfortunately, there are occasions when mechanical resuscitators are not available at all. This fact should underscore even more emphatically the need for a thorough knowledge of the new back-pressure arm-lift method not only among professional and semi-professional rescue and medical personnel, but also among the general public.

Pictures by courtesy of the American National Red Cross.

New Film Features Plant Maintenance

HOW a number of the country's leading industrial plants have effected new efficiencies and marked economies by employing fork-lift trucks and towing tractors in plant maintenance operations, is shown dramatically in a new 15-minute motion picture, "SERVES YOU RIGHT!" just released by the Clark Equipment Company of Battle Creek, Michigan.

This new movie, which is in black and white, with sound, also features the use of industrial radio in the operation of a fork-truck fleet working in both plant maintenance and materials-handling activities. Many of the sequences show ingenious employment of the fork truck in plant maintenance work, and contribute largely to the film's thought-provoking qualities.

How to Order Film

"SERVES YOU RIGHT!" is available to plant executives, schools and colleges, transportation and materials handling groups, foremen's clubs and others with a legitimate interest in plant maintenance and materials handling operations, on a loan basis, as are all other films listed in Clark's movie catalog. Requests for the movie should be addressed to the Clark Equipment Company, Industrial Truck Division, Battle Creek, Michigan.

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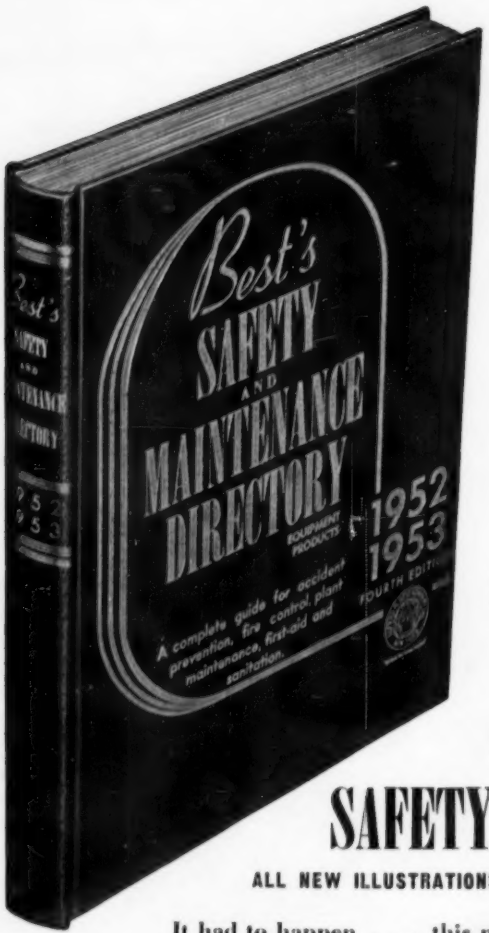

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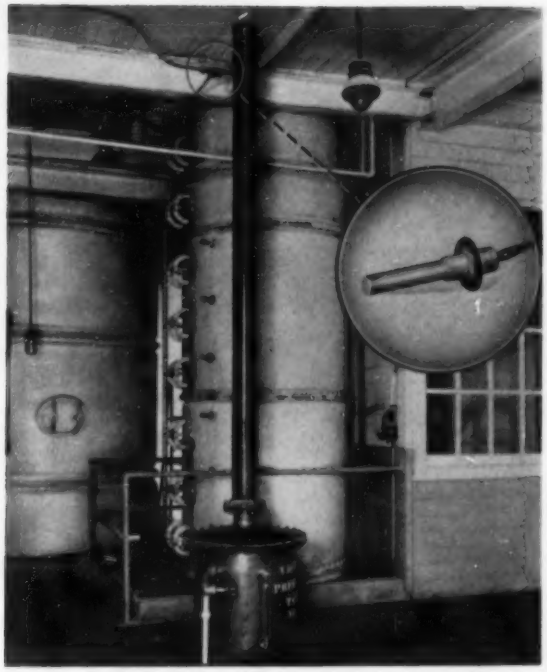


A still room with a seal pot unit directly in front of a still. The detecting unit is installed in the seal pot duct.

No Blue Flames When An Alcohol-Vapor Detecting System Is On the Job

In an alarm system to prevent explosions in distilleries, a thermostatic unit has been adapted to the detection of escaping hot alcohol vapors.

THE use of a fire and overheat detecting thermostat has been instrumental in eliminating an explosion hazard in the distilling plants of Schenley Distillers, Inc. The hazard formerly developed when, during distilling operations, excessive pressure in a beer, whiskey, or alcohol still caused mechanical relief devices to operate, permitting alcohol vapors to escape into the still building.

To eliminate this condition, a unique protective venting arrangement incorporating an alarm system based on a special type of heat detector was devised by Schenley engineers under the direction of Mr. G. M. Burke, Fire Protection Engineer. Seal pots (water-filled pressure relief devices) were designed to include a 6-inch copper duct to carry the vapor directly from a "blown" pot to the exterior of the still buildings. This construction prevents the release of vapors inside the building, but raised the problem of finding a quick, positive means of detecting the escape of the alcohol to keep product loss to a minimum.

The heat detecting units, which combine the properties of high sensitivity, rapid response, and explosion-proof construction, were selected to trigger an alarm system. The detector reacts to the escaping hot vapor (about 220°F) and actuates both a visual and audible alarm that enables the still operator to take immediate corrective action. The duct from each seal pot contains a detector which operates a specific "drop tag" on a control panel. Actuation of a detector by escaping vapor closes a circuit which sounds a bell or siren, shorts out a green "safe-operation" light, while illuminating a red "trouble" lamp and operating the appropriate drop on the panel. If the blown seal is the result of a temporary vapor surge in the still, the operator merely refills the seal pot with water; otherwise, he shuts down the still until the trouble is located.

This seal pot venting and alarm system, said to be unique in the spirits industry, has been installed in the 21 Schenley distilleries through-

(Continued on page 43)

RIGHT: Drillman's training class shows new employees how to do it the safe way.

ELIMINATE MINE

To eliminate mechanical and physical hazards in underground and ore-processing operations, provide mechanical guards, personal protective equipment, and safety training.

By LAMAR WEAVER
Superintendent of Mines
Tennessee Copper Company
Ducktown, Tennessee

TO UNDERSTAND our safety problems, a brief outline should first be given of the production background of the mines and plants of the Tennessee Copper Co. The mines, which are of the shaft type, are located between Copperhill and Ducktown, Tennessee, in Polk County. The ores are sulphides containing economic values of copper, zinc, iron, and sulphur.

The mine ore production is treated by mills where concentrates of copper, zinc, and iron sulphides are made by fine grinding and flotation. Concentrates of copper and iron are hauled by rail to the smelter for separation of the copper, iron and sulphur. The sulphur is passed, as a hot gas, to the acid department through flues. There, various grades of sulphuric acid are made.

Ore, concentrates, and other products are hauled by the company's railroad equipment to the plants. The company railroad also connects with the L & N Railroad for shipment in or out of Copperhill.

The company has an Engineering Department which includes shops, construction, maintenance, and electrical organizations. Other departments are: Chemical Engineering, Merchandising, Medical and Hospital, Service, and Safety.

Elimination of physical hazards is never a complete job. There are problems solved today that will be restated and a better solution reached in the future. The process of improvement must be constantly repeated to fit new methods and machinery.

Problems are classed under the following closely related headings.

	Company Experience	
	Frequency	*Severity*
1. Mechanical Guards	.46	.74
2. Personal Protective Equipment	.41	.02
3. Job Training in Safe Practice	3.01	2.70
Total Accidents	76	76

For detailed descriptions of guards, personal protective equipment and educational aids, see pages 87–242, 420–434, and 473–485 of

"Best's Safety & Maintenance Directory" 1952–53 Edition.

Mechanical Guards

1. A machine should be guarded so that the operator can operate it without injury to himself in the performance of his productive work. This is usually possible where you can expect the human being to follow the expected rational method. Guarding, though, should be planned to protect the individual *against his own mistakes* as well as during the normal operation of the machine.

All hazardous moving parts should be adequately covered with neat and serviceable guards. New machines are usually well equipped with this type guard; but if additional guards

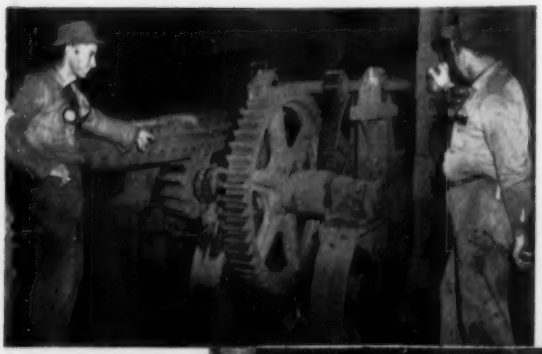
HAZARDS

Fire extinguishing equipment must always be in first class working order. Here, in the Tennessee Copper Company's liquid dioxide plant, carbon dioxide hand extinguishers are weighed to make sure they are fully charged for an emergency.

One of the items in a company display of safety equipment is the beetle back, a shield to protect head, shoulders and back.

In the company hospital, the operator of the x-ray machine is protected against excessive exposure to radiation by a lead shield with a leaded-glass window.

Two steps taken to eliminate the hazard of unprotected gears in the roaster drive of the smelting department. Top picture shows original drive gearing in which men could easily be caught. In the center picture, the roaster drive has been covered by a guard. Later, the speed reduction gearing was replaced by motor connected directly to the roaster drive.



are added, it is preferable to include a consideration of appearance with some streamlining which adds to the appearance after painting. This type of mechanical guard should be provided for belts, chains, gear drives, shafting, and such machinery as hoists, crushers, motor drives, trucks, grinding mills, grinders, etc.

2. Point of operation guarding covers many shop machines, such as wood and metal machinery where cutting or shaping is performed. Guards here should protect the operator from the machine or material. The few methods that follow may be useful.

(a) Two-hand control movements.

(b) Guards that push or pull the operator's hands away from the danger point.

(c) Automatic or mechanical feeding devices.

(d) Stop switches if operator's body gets too close.

(e) Shields, covers, hood covers or enclosures near a crusher or high speed hoist rope guard.

3. Mechanical guarding of the machine to protect other workmen must not be overlooked, typical applications include:

(a) Hoists: Limit switches, speed governors, automatic stopping devices for abnormal action by the operator. More of it is needed on our highway vehicles but the governors are not popular.

(b) Haulage motor: Front and rear lights, brakes and alarm bell or horn unsparingly used, are good safeguards in mine haulage.

(c) Caution signs with safety directive is good for reminding the absent-minded pedestrian.

Personal Protective Equipment

Under this heading in mining are the following items.

(a) Safety hat for head protection.

(b) Proper goggles for work to be done.

(c) Safety belt and tie rope if in danger of falling.

(d) Hard-toed shoes or additional protection for the feet if needed, such as leg and foot guards.

(e) Raise work—special head and body protection such as the Beetle Back.

(f) Good lighting, and respiratory protection if exposed to dust or harmful gases.

Job Training in Safe Practice

Unsafe practices are the major killers in our industry. To obtain safe practices involves the planning engineer, the operating supervisors, skilled workmen, in fact, all of us. In underground mining safe practice starts with roof checking from falling ground, unexploded dynamite in missed holes, and ventilating air.

To all concerned, when it is known that a job cannot be done safely with the method in use, it should be an emergency problem until solved. In all of my experience I have never seen a problem so attacked that couldn't be solved. For years we used an unsafe roof hanger that was not dependable because no one knew how to figure its

holding strength. Then after a slight, though lucky, accident where a roof bolt pulled out, as others had done for 40 years here, a dependable one was developed. Likewise, before raise work was resumed the Beetle Back was produced, after a man lost his life following known unsafe practices with protection of only a hard boiled hat.

Another item under preparation for mine work is "method." What method do you choose? A safe one.

1. Much safety progress was made in stoping by changing from shrinkage to sub-level open benching and then to diamond drilling of blast holes. Stope accidents have been decreased 82% in frequency and 99% in severity by the new stoping methods using long blast holes drilled in rings with a diamond drill.

2. Electric blasting from a safe distance is definitely safer than fuse detonation.

3. Primacord detonation is a vast improvement over multiple cap detonation, since it eliminates a few misfires that would result in having explosives left in the stope for the loader to discover the hard way.

4. Loading by slusher methods changed an unsafe job, involving the hard work of moving broken ore by man power, into a safe one using electric power. The operator is removed from the hazard of moving ore.

Slusher loading was proposed to replace gravity loading by hand tools through a grizzly into a car or ore pass. The results were profitable in raising the tons per man from 60 to 112 tons, and the safety record was much better. The accident record for loading was decreased 95% in frequency and 97% in severity.

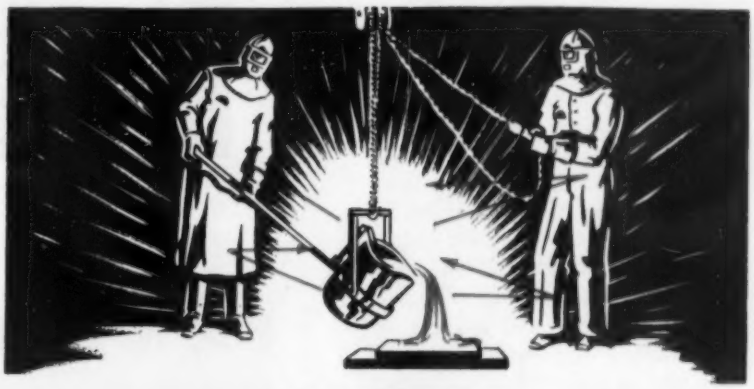
5. Haulage hazards from contact with a trolley wire were removed by use of battery locomotives.

6. Electric camp lamps are an improvement in lighting over the carbide lamps for safety and efficiency.

7. Mine ventilation and dust control was a great contribution to health, production, and safety.

Methods must improve and to get results the operators must be trained

LOOK FOR THE GARDWELL Products TRADEMARK



ALUMINIZED GARDWELL CLOTHING PROTECTS AGAINST HEAT HAZARDS—REFLECTS 90% OF RADIATED HEAT

GARDWELL Aluminized Clothing is almost in the "Miracle" class. In foundries, steel mills, forging plants, heat treating shops, etc.—in fact, any place where there is radiated heat—GARDWELL Aluminized fireproofed duck or Aluminized Underwriters Grade Asbestos protective garments, gloves and mittens offer protection not heretofore available. The heat is 90% reflected. The worker's body remains at normal temperature in spite of the great heat just a few feet away. Protection is also afforded against metal splash.

GARDWELL Aluminized Fireproofed Duck and Aluminized Underwriters Grade Asbestos are both available for heat reflecting curtains and heat shields—made to any size desired.

No. 301 A

GARDWELL Aprons come in a wide range of styles and sizes; made from various materials; Aluminized Underwriters Grade Asbestos Apron is illustrated.

No. 740 A

GARDWELL ALUMINIZED Underwriters Grade Asbestos Coats come in lengths from 30" to 44" as illustrated. Also in longer models with double front and leather straps.

No. 500 A

GARDWELL "FRANK" Leggings are made in various styles and from various materials. Style illustrated is from Aluminized Underwriters Grade Asbestos.

With over 27 years of experience in manufacturing Safety Clothing and Equipment you can be sure that any product with the GARDWELL Trademark is highest quality. Write for catalog and information.

Safety CLOTHING AND EQUIPMENT Co.
1990 EAST 69TH STREET · CLEVELAND 3, OHIO
PHONE HENDERSON 2-0400

in the details of the new equipment and its application.

Job Training in The Mines

A new employee after being employed to work in the mines is informed of the underground policies of safety, health, and working conditions by the superintendent. He is then checked for the underground equipment required, a hard hat, goggles, hard-toed shoes, lamp belt, and cap lamp. After equipment is procured, he is trained in the underground work briefly as follows.

An experienced miner who has proven leadership and interest in the teaching and development of new men is selected as the training school foreman. The course is given to all men who are to be promoted above underground labor. It consists of:

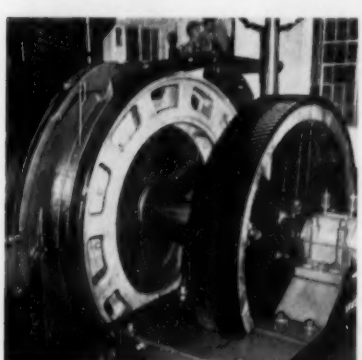
1. A week on miscellaneous underground jobs in a group of 4–6 men. This is to prove his being "willing and able."

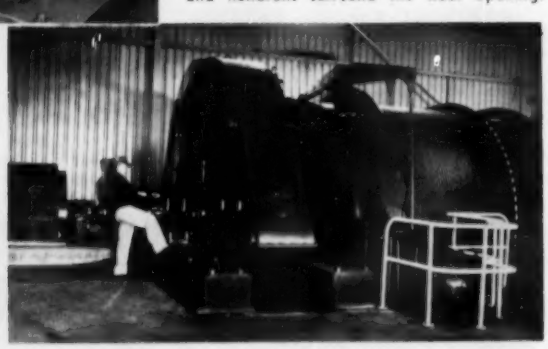
2. A week of first aid training and schooling in all of the safety rules.

3. Practice week, examinations and proving of knowledge of underground work.

Supervisory Training Class shows foremen how to teach safety.

This underground transformer station in the company's Boyd Mine is typical of the isolation of high voltage equipment. The transformer is inside a brick enclosure with a catch basin for spilled oil. Signs warn unauthorized personnel away.





Safety is process of continuous improvement. At left is an old style gear guard for a shaft hoist. Only the nip point was guarded. Below, the guarding has been greatly improved: the gears are completely covered and handrails surround the floor opening.

4. Finishing of special work and awarding of certificates to qualified men.

The results of this schooling have been outstandingly good from three points: (1) The men develop a confidence and a liking for mining work; (2) those who do not give promise of underground work abilities for any reason are transferred to surface, and (3) the accepted men require much less training and watching by a foreman when put on production.

From an address presented at the thirteenth Southern Safety Conference, Atlanta, Ga.

Overseas Sergeant Desires Information

AN ARMY Safety Engineer stationed in Japan is collecting material on Laboratory safety.

Readers having extra copies of safety manuals, papers or material are urged to send them to: S.F.C. Julius Morris, RA 32968347, Safety Engineer, Safety & Health Section, Sta Comp, Camp Yokohama, APO 503, c/o Postmaster, San Francisco, Calif.

Two Conferences to Study Blast Effects on Buildings

THE effects of atomic bombs and earthquakes on structures will be discussed in conferences to be held this June at the Massachusetts Institute of Technology and at the University of California, Los Angeles Campus. The M.I.T. conference, "Building in the Atomic Age," will be held on June 16 and 17 and the California conference, "Symposium on Earthquakes and Blast Effects on Structures," from June 26 to June 28.

The two conferences, which have been planned independently, are designed to bring the most recent research results and professional developments in the field to architects, builders, building officials, city planners, plant managers, practicing engineers, and public works officials.

The program at M.I.T. has been arranged by the Institute's Department of Civil and Sanitary Engineering. Chairman for the conference is Dr. Robert J. Hansen, Associate Professor of Structural Engineering.

The conference will present the latest available knowledge on the effects of atomic bombs and on the design of structures for resistance to large blasts. In addition, discussions will be held on the important economic aspects of blast resistant design and of the necessity for dispersion as a national policy.

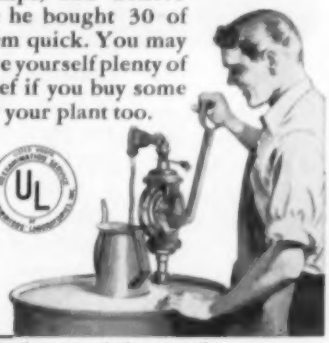
The program at (To page 42)

The one precaution Tom overlooked . . .

Tom McBride was the best safety engineer our company ever had. He had an uncanny sense of detecting danger, and seemed to do the things necessary to prevent accidents before they occurred. We won three safety citations under Tom's direction. Our plant was clean as a pin.

But then the roof fell in. A worker in the machine shop slipped in a pool of spilled oil, fell and broke his arm — a nasty break at the elbow. A day later a boy in the press room had a similar accident, except he sprained his back. It looks like it may be serious. But the payoff was the fire in the tool crib. Someone dropped a lighted cigarette in some oil drippings, and I'm ashamed to tell you what happened. Among other results, it damaged some valuable dies that will take months to replace, and almost lost us an important customer because we couldn't make delivery on time.

Careful as Tom is, he didn't realize that there are better ways to transfer oil than by drawing it through a spigot. I told him about Tokheim Hand Pumps, and believe me he bought 30 of them quick. You may save yourself plenty of grief if you buy some for your plant too.



QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

Order from your dealer, your oil company, or your Tokheim representative. Write factory for literature.

General Products Division

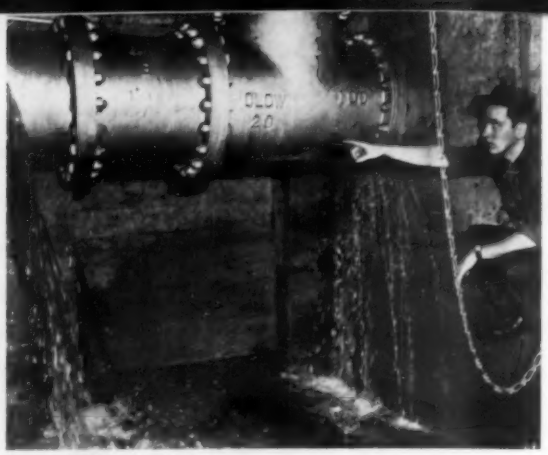
TOKHEIM OIL TANK AND PUMP COMPANY

1672 Wabash Avenue, Fort Wayne 1, Indiana

Factory Branch: 1309 Howard Street, San Francisco 3, California

NEW METHOD FOR REPAIRING BROKEN MAINS

A new experimental technique for repairing broken water mains recently was put to the test under actual emergency conditions—and proved successful.



Water gushes from two breaks in the 20-inch main in the Newark, Ohio, pumping station, forcing water department officials to cut off direct supply and switch to the reservoir.

WITH ultra modern trimmings, the story about the little Dutch boy at the dike was reenacted in Newark, Ohio, recently. The story began to unfold on the afternoon of March 21 in the municipal pumping station when a 20-inch water main broke in two places threatening the water supply of Newark, which has a population of 35,000.

The situation became more critical by the hour when city and township fire departments were unable to cope with the needs by pumping water into the city mains. The two departments worked for more than 10 hours pouring 570,000 gallons into the distribution system, which is only $\frac{1}{14}$ of the daily consumption.

Workmen wrapping pressure sensitive and woven glass tapes around the main.

Climax in the battle was reached when city officials ordered industry to curtail its water demands and possibly shut down completely, throwing thousands of persons out of work. When this news reached the plant of Owens-Corning Fiberglas Corporation, largest in Newark, a group of the company's technologists assembled to discuss possibilities of using a new experimental technique to mend the broken main.

At this point, the reserve supply of 3½ million gallons in the reservoir on top of Horn's Hill was slowly dwindling. Newark normally uses eight-million gallons of water daily.

The main taped with the glass-fibre pressure-sensitive tape.

In the meantime, Owens-Corning laboratory men, who have been working on an emergency repair kit with the Navy for just such repairs aboard ships during battle engagements, were mapping out plans with Dale Kleist, laboratory manager, and Harry Smith, head of laboratory engineering.

There were two breaks about ⅜ of an inch wide at each end of a 14-foot section of pipe. Welding experts said it would take at least 20 hours to make a doubtful mend.

With the water supply in the reservoir now more than half gone, the dozen Owens-Corning men, armed with a glass-fibre type of tape, sheets of rubber, steel bands, China clay and several chemicals, descended into the pumping station pits, which by now were drained of excess water.

Method of Repair

Splashing around ankle deep, the men actually began work on the repair at 9:30 P.M. and completed the job in less than three hours.

The emergency repair was effected by placing one-eighth inch thick rubber in four-inch wide strips over the breaks. Then three-inch wide steel bands were applied and tightened. Next used was layer on layer of glass-fibre reinforced pressure-sensitive tape a half inch wide and more glass-fibre woven tape four inches in width.

During the application, Ralph Sonneborn, an Owens-Corning development engineer, was mixing a solution of polyester type resin, China clay, peroxide catalyst and cobalt accelerator in paper cups and others were applying it on the tape.

This fast hardening mixture required speed in handling as the tape set within minutes making a firm plastic bond as it contracted during drying. Mr. Sonneborn said the China clay was used to give the solution body for easier handling and to make the repair non-porous.

Shortly after midnight the repair team stepped aside and watched as Robert Bowman, waterworks superintendent, ordered the valve opened to the high pressure line.

Slowly the pressure mounted to full capacity without a single drip. The pipe carries an average of 8,010,000 gallons daily. So secure was the repair that the water department stepped up the pressure enough to supply the entire city at peak capacity and still pump enough water to refill the reservoir on top of Horn's Hill. Robert Evans, service director of Newark, said only a foot of water remained in the reservoir when the temporary repairs were completed.

"There wasn't enough water left on the hill to fight any sizeable fire and we're mighty thankful that there wasn't a fire," Stanley Shaw, fire chief, remarked, a few days after the excitement wore off.

The material employed in the emergency repair, which lasted for more than a week while permanent replacements were made to order and installed, is similar to the glass-fibre-reinforced laminated plates in

(Continued on page 39)

• Sweating in hot weather can cause a tired, listless feeling and make every move an effort. These symptoms are caused by the loss of salt from the system. Salt is lost amazingly fast through perspiration and research has shown that "lassitude" and "loss of will to work" can occur when as little as 10% of the salt in the system is lost. As vigor and vitality go down the accident rate can go up. Prompt replacement of this salt can quickly restore vigor and vitality and the most satisfactory way of replacing salt in the system is by taking PEP-UP Impregnated Salt Tablets. These tablets are subjected to an exclusive patented process which forms a complete coating around each crystal of salt in each tablet—when swallowed the tablet dissolves slowly, thus avoiding the nausea and digestive disorders usually noticed with the taking of plain salt.

60-second action

without fear of nausea or stomach distress

PEP-UP impregnated salt tablets

release salt immediately!

(not enteric coated)

- Controlled (slow) dissolving eliminates nausea.
- Starts dissolving immediately.
- Dissolves completely in about 100 minutes.
- No delay in getting salt into system.
- Withstands high temperatures and rough handling.
- Can be stored for long periods without deteriorating.
- Will not absorb moisture from air and clog dispensers.
- The tablets meet government specifications for Type III, Class C impregnated Salt tablets (specifications set forth in Federal Standard Stock Catalog No. SS-S 31d, Section IV (part 5), dated September 11, 1951).

EXPENDABLE DISPENSER

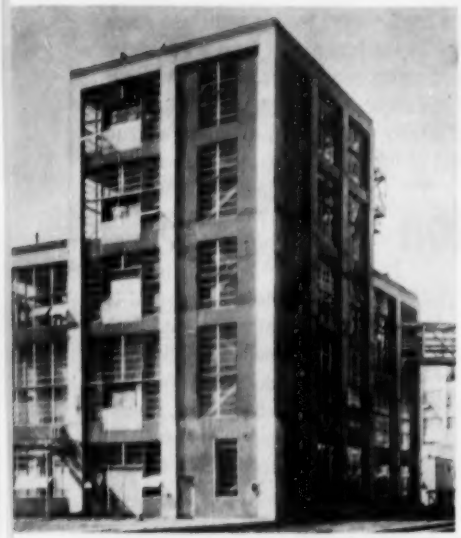
PEP-UP Impregnated Salt Tablets are packaged in sanitary factory-sealed Dispensers at no extra cost. THROW AWAY DISPENSER WHEN EMPTY. HANG UP A NEW ONE. Save the expense of purchasing, servicing and replacing individual dispensers.

Write for literature and prices.

UNITED STATES SAFETY SERVICE CO.

KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES

In Canada PARMELEE, LTD. Toronto



The Corn Products plant in Argo, Illinois, has aluminum window installations throughout.

Aluminum Windows Boost Safety And Maintenance

If you want windows that you can hang and forget, and who doesn't, then investigate aluminum windows, which require little maintenance and also aid safety.

THE incorporation of aluminum windows in architecture and engineering design of buildings can pay good dividends in reducing accidents and maintenance costs.

The Aluminum Window Manufacturers Association explains this simply . . . "If a building product requires no maintenance it follows that no accidents involving the act of maintenance are possible."

Reduces Falls

Since aluminum windows do not require painting, the problems of scaffolding and staging are eliminated. No painting, and the fact that aluminum windows will not rust, rot or warp, contributes in other ways to reducing the possibility of falls. Aluminum windows never stick from painting, swelling or rust and therefore are easily opened. Employees aren't subject to floor falls or falls out of the window as a result of efforts to open windows that refuse to budge.

The window cleaner, too, is benefited from non-sticking window sash. Windows that do not stick reduce the temptation for a window cleaner to engage in "sky-hooking" when he is cleaning a window. Records show the practice of sky-hooking, stepping around masonry columns on the exterior of the building, etc., to get from one window unit to another, can be very dangerous.

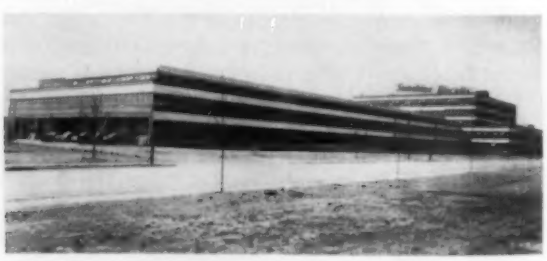
Maximum Light

By allowing the maximum amount of light to pass for any given size of wall opening, aluminum windows contribute to keeping accidents low and production high. The strength of aluminum alloys enables window fabricators to utilize the maximum in narrow window sash, muntins and mullions . . . giving more light to the interior of the building for each unit of opening. The amount of additional light varies with the type of aluminum sash specified. Of interest to safety engineers is the fact that double panes and solar glass can be utilized in aluminum windows when needed.

AWMA label assures quality of window.

Being non-combustible, aluminum windows are an aid in preventing the spread of fires. Wire glass, an asset in event of fire, is available for installation in aluminum sash. Fusable links, designed to melt and

Shulton, Inc., of Clifton, New Jersey, has maintenance-free light-increasing aluminum windows in its new modern factory.



More than 1500 aluminum windows were installed in this Sunshine Biscuit Company plant in Kansas City, Missouri.

automatically close windows in event of fire, can also be used with aluminum windows.

Controlled Ventilation

Greater controlled ventilation is possible with aluminum windows. Aluminum window manufacturers, through the Technical Committee of the Aluminum Window Manufacturers Association, have established standard air infiltration performance standards. They are the only window sash group who have done this to date.

In addition to eliminating or reducing accident hazards and providing comfortable working conditions, aluminum windows offer a financial bonus in the fact that the cost of maintenance is reduced or eliminated.

It would not be unusual to assume that the factories which keep up their sash would spend $10,000 every three years to paint two thousand windows with two good coats of paint. This cost of $3,000 per year is now being eliminated by many companies by the installation of aluminum sash in new construction, and on replacement projects.

Assuming that a factory does not paint its wood or steel sash, the savings would be even greater as the periodic replacement of new steel or wood windows is usually higher than keeping them well-cared for with good paint. This savings would make the aluminum windows' contribution to net profit even greater.

Aluminum windows are of added value, maintenance-wise, to food and baking companies. Since aluminum windows will not rust or rot, they contribute to the ease and safety of the baking process through cleanliness. They have also proved to be advantageous in such applications as vinegar plants where aluminum resists attack by diluted acetic acid fumes.

Guide for Safety Engineers

The following will serve as a helpful guide to safety engineers, architects and plant executives in

(Continued on page 48)

Pyrene
REG. U.S. PAT. OFF.

CAREFULNESS ISN'T ENOUGH
YOU NEED PYRENE, TOO!

There's a Pyrene for every fire hazard

The watchword of fire prevention is *Be Careful*. But fire may come—any time. When it does, Pyrene* can make the difference between a harmless scare and a gutted business. Whatever your fire hazard, there's a Pyrene to cope with it—for Pyrene makes everything from hand extinguishers to complete automatic fire-fighting systems.

*T.M. Reg. U.S. Pat. Off.

Vaporizing Liquid
Always dependable, multi-use extinguisher.

Cartridge-Operated
For ordinary fires. No annual recharging.

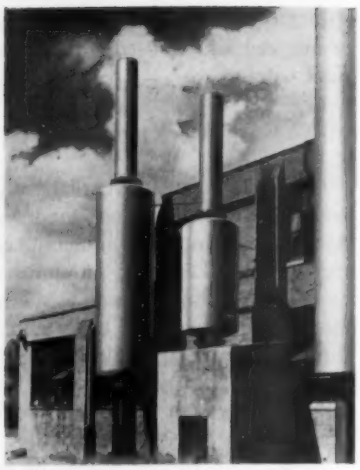
Chemical Foam
For flammable liquids, ordinary combustibles.

Systems
Large and small, manual and automatic.

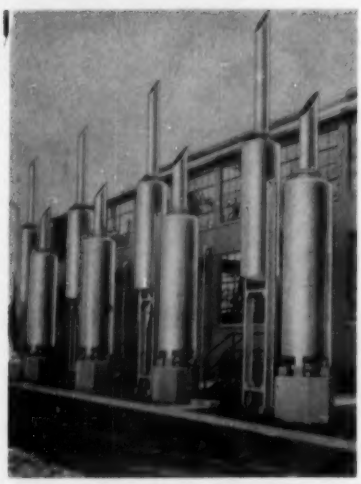
. . . and other approved extinguishers

PYRENE MANUFACTURING COMPANY
693 Belmont Avenue Newark 8, New Jersey
Affiliated with C-O-Two Fire Equipment Co.

Exhaust Noises & Sparks Get Snubbed



Snubbers on an Ohio municipal light plant.



Combination cleaner snubbers on a gas pipe line station, for cleaning air, preventing intake noise, and controlling line surges.

If you want to "snub" the noises and sparks from the exhaust of internal combustion engines, it doesn't mean that you ignore them, but rather that you eliminate them.

WITH the road to profits beset by spiraling labor and material costs, mounting taxes and kindred problems, management is focusing attention on protective and constructive measures that will contribute to economies, boost morale and reduce loss from fire, accident and manpower failure.

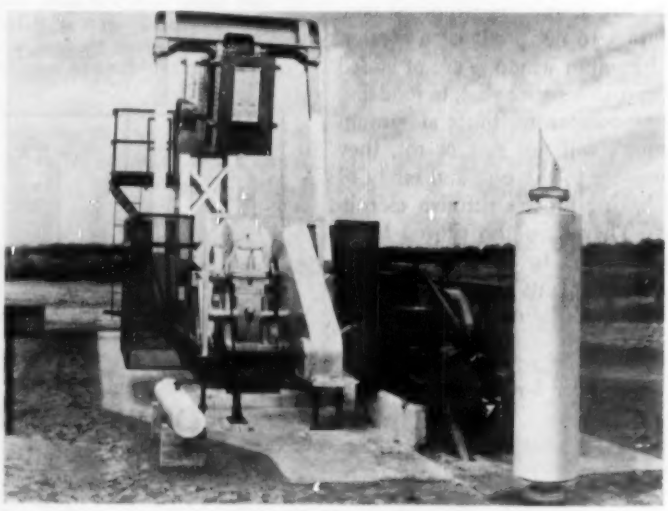
One evidence is the growing use of scientific developments that result in greater safety to personnel, plant and equipment and help to maintain high and continuous productivity. A striking example is the interest in installation of noise abating and spark arrester equipment.

Loud and sometime dangerous exhausts that emit sparks and kindle fires, endangering personnel and equipment, are being brought under control by such equipment as snubbers, some of which not only put the kibosh on errant decibels, but also douse dangerous sparks. These devices are designed to meet modern industrial needs, particularly in the railroad and marine transportation field, the expanding petroleum and chemical industries and elsewhere in hazardous industries.

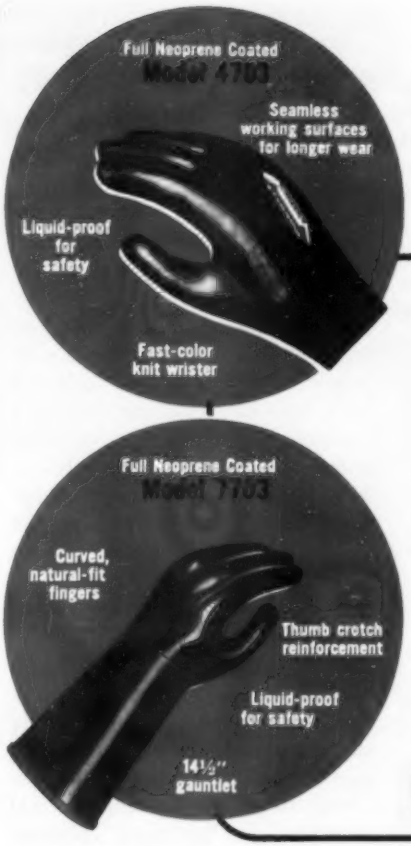
Fire, man's best friend—and sometimes one of his worst enemies—is an inherent danger in many industries. Its prevention is, and always has been, a top flight priority with management.

Within comparatively recent times, manufacturers of safety devices have perfected the spark arrester and have largely overcome the hazard of sparks from the exhaust of internal combustion engines. This has followed the development of the prime mover from the steam engine to the Diesel. Modern types of arresters are the result of technological development of principles that were known for some time, but they are now harnessed to meet the present-day needs of industry.

Many engineers have studied the twin problems of spark arresting and subduing exhaust and intake noises. A new type has been developed that utilizes the ancient



Oilwell pumping engine equipped with a snubber.



HOOD "electronically timed" dipping assures uniform, safer GLOVES

You can be sure that Hood gloves have no weak spots caused by thin coating, because they are carefully and uniformly dipped, using an accurate electronic timing device.

Hood's quality control system, with continuous inspection at every step, results in extra-quality, uniform gloves with maximum safety.

Hood makes a complete line of industrial rubber gloves to meet every job requirement. Write today for colorful catalog featuring the Hood Glove Guide, which shows you "how to choose the RIGHT Glove for EACH job."

hands are vital..protect them with HOOD GLOVES

HOOD RUBBER CO., Watertown, Mass.

principles in a unique manner. After a decade of laboratory research and field experience, this company has a spark arrester which permits the safe use of all types of internal combustion engines in a wide variety of hazardous spots.

The underlying principle of the spark arrester is the use of centrifugal force to separate solid particles from the exhaust gases. This is the same force, which with its conjugate, centripetal force, holds the universe together and at the same time prevents the cosmos from ending up in a bang. Another force, "inertial" is, however, brought into play in this spark arrester.

Widespread use of the Diesel engines required an exhaust system that was not a hazard in critical areas, such as drilling operations, refining, logging and the like. Without such an exhaust design, incandescent carbon particles which form in the cylinders around the exhaust ports or in the exhaust system itself, break off from time to time and are ejected into the atmosphere.

There are several types of spark arresters. The side-inlet spark extinguisher snubber combines exhaust quieting with reduction from danger of fire or explosion of gases within the device itself and is especially adapted for use in engines using natural gas as fuel. It may be used with or without the fog jet. The latter is a device which sprays a fine jet of water on exhaust gases and doubly safeguards against fire or explosion.

The industrial spark arrester snubber also removes sparks and other solid matter from the exhaust gases. It is especially designed for industrial engine installations in logging camps, refining and chemical operations and in simliar hazardous operations.

A third type, the marine spark arrester snubber, is a compact device widely used on boats, from towboats to ocean-going freighters.

One of the recent installations of this type was on the towboat Aetna-Louisville, which has joined the fleet of the Ashland (Ky.) Oil and Refining Company. This triple-screw vessel is equipped with three 1600 hp Diesels and three 100 kw Diesel-driven generators. The six Diesels utilize the snubbers both to reduce noise and to reduce spark danger.

Exhaust snubbing spark arresters, like the usual type of industrial snubber designed primarily for noise control, use coaxial snubbing tubes which disperse high pressure gas slugs in the exhaust stream, and at the same time tend to scrub out incandescent carbon particles.

The spark arrester snubbers range from tiny units that weigh only 14 pounds, up to the giants that tip the scales at 15,000 pounds.

Pictures by courtesy of Burgess-Manning Co.

For further data on Advertised Products, use the "Check List" on page 76

Life-line FOR HARD-TO-REACH RESCUES

the E&J MICRO EXTENSION UNIT

For immediate and effective resuscitation of victims trapped or being extricated, rely on the E & J Micro Extension Unit. No larger than your hand, no heavier than your shoe, connected by just one hose line to its parent E & J Resuscitator, it is easy to carry and use in tight spots. Learn all about this handy life-saver without delay by writing today to . . .

E&J Manufacturing Co.

Dept. 521-4, Burbank, Calif.

Anti-Slip Waxes

(From page 15) up by grinding, sharp corners are still left at the edges, because the fracture follows the "mortar" lines, or cleavage planes, as they are called technically.

In colloidal silica the situation is entirely different. The atoms of silicon and oxygen are not lined up in regular array, but in a more random fashion. Compared to the silica in sand, the particles of colloidal silica are much softer, and since they are spherical in shape they have no sharp corners. The shape, together with the minutely small size, precludes abrasion.

Wax Formulations Containing Colloidal Silica

Properly formulated regular waxes are generally blended with colloidal silica at the rate of 2 parts of the conventional wax formulation by volume to 1 part of colloidal silica by volume, at the same solids concentration. Thus, 2 gallons of 12% wax generally requires 1 gallon of 12% colloidal silica. When incorporated in this ratio, colloidal silica has the property of markedly improving the anti-slip properties, and at the same time giving greater hardness to the wax film. Evidence for the mechanics of this improvement has been gained by studying electronmicrographs showing that colloidal silica particles actually surround each wax particle, and are also present in the surface of the wax.

If a wax film is magnified 500,000 times, the individual wax micelle would be about the size of tiny oranges 1½ inches in diameter, as shown in Figure 2. Throughout the spaces between the oranges there will be a lace-work of ammonia-soluble resin, such as manila gum. These resins help make the surface smoother, help water resistance, and also assist in lining up the individual oranges more evenly. In the diagram, the emulsifying agent is represented as tiny toothpicks sticking in the orange peel. Depending on how these toothpicks are imbedded in the skin, how many there are, how they are shaped, and what they are made of, a change is made in such properties as general stability, water resistance, and gloss of the wax.

When colloidal silica is added to the wax formulation, the film produced can be diagrammed as in Figure 3. The colloidal silica particles, which on this scale are clear, transparent marbles ¼ inch in diameter, orient themselves so that they surround the individual oranges. The uppermost layer is now largely composed of these colloidal silica marbles which are somewhat harder than the wax particles. This makes the entire film harder to the foot. When the wax is stepped on, the pressure of the foot pushes the harder colloidal silica spheres into the larger, softer wax particles. Energy is absorbed which helps keep the foot from slipping.

Wax manufacturers have found that the basic geometry of the wax film requires that a certain number of silica particles be present in order to surround each wax particle sufficiently to give good permanent skid resistance. For this reason, optimum results are generally obtained when about two parts of a conventional wax formulation are blended with one part of colloidal silica solids.

Well-formulated waxes containing clear colloidal silica are fully the equal of conventional waxes in gloss, freeze resistance, water resistance, and leveling. Often, there is a visually apparent difference in the quality of the gloss from a wax film containing colloidal silica.

This clear colloidal silica is virtually transparent to the eye even in concentrated form. As a result of this clarity, in many cases, the addition of this new material gives the appearance of a greater depth of film because light rays are let down into the film, and are then reflected from the top of the linoleum or tile.

Performance of Anti-Slip Waxes

In the short period of three years since the introduction of these improved wax formulations, performance in industrial and institutional locations has been evaluated under

Complete K-LENS-M Lens Cleaning and Anti-Fogging Station — easy to install, use and service.

How to Get Your Women Workers to Wear EYE PROTECTION!

It's easy, with K-LENS-M Products, for women will wear clean, clear shields or goggles. K-LENS-M Lens Cleaner thoroughly cleans eyewear and K-LENS-M Anti-Fogging Liquid prevents "steaming-up" under severe working conditions. Easy to use, lasting, safe and effective on glass or plastic goggles and shields. K-LENS-M products help keep eye accidents down . . . production and efficiency up . . . visibility perfect!

Send for FREE Sample of K-LENS-M products. Specify if sample tissue is desired.

NEW . . . K-LENS-M Twinkit . . . For off-premises use on glasses or goggles. The same K-LENS-M Lens Cleaner and K-LENS-M Anti-Fogging Liquid, in pocket-size kit. FOR THE BRIGHTEST DAY THEY'LL EVER SEE— Use K-LENS-M!

THE **WILKINS** CO., INC.
CORTLAND 2, N. Y.

nearly every possible condition. These practical tests together with laboratory research have now made it possible to offer to buildings maintenance personnel a whole series of floor waxes possessing a balance of properties, including anti-slip, never before available. Adjustments have been made in the formulations, so that glossy, long-wearing wax films can be laid down having the important elements of hardness and skid resistance. Regular maintenance of these unique floor waxes and finishes follows closely the time-proved practices of wet and dry mopping, followed by buffing. Occasionally, skid resistant waxes present a somewhat different appearance on the floor, because of their greater co-efficient of friction. Scuff marks, for example, may be shorter than those with conventional waxes. These scuff marks are easily eliminated by buffing to restore gloss. Some slowing down of the buffing wheel may be noticed during periodic maintenance, but this is only further proof of the greater margin of safety in these new waxes.

It is estimated that approximately 25% of all buildings wax sold today contains clear colloidal silica to obtain anti-slip properties. To the wax manufacturer, this means greater market opportunities, because he can offer to key consuming groups, institutions, businesses, and homes —locations with many different safety requirements—unique floor waxes with an extra margin of safety. The development of this clear colloidal silica has elevated the industry goal to a higher per capita wax consumption than ever before.

Waxes containing colloidal silica have proved their worth under the most difficult conditions, because buildings' superintendents are very conscious of cost and quality. In order to convince maintenance men to switch from conventional waxes to waxes containing colloidal silica, outstanding anti-slip advantages had to be demonstrated. The attention of the other major consuming group, the household field, is now being drawn to this new development. This clear colloidal silica has given dynamic growth to the buildings wax industry, which will undoubtedly be carried over into the household field.

Pictures by courtesy of E. I. du Pont de Nemours & Co., Inc.

Repair of Broken Mains

(Continued from page 33)

bullet-proof vests being used in Korea, Clare E. Bacon, manager of the plastics division of Owens-Corning, said.

Several years ago such an undertaking with reinforced plastics would have been out of the question. Now, according to Mr. Bacon, plastic can be used to repair whole sections of damaged buildings. Its ratio of high strength to low weight is fantastic, and its adaptability to unusual developments, like the Newark situation, is no longer unproved.

Pictures by courtesy of Owens-Corning Fiberglas Corp.

In *TOE SAFETY...* it's the INSIDE

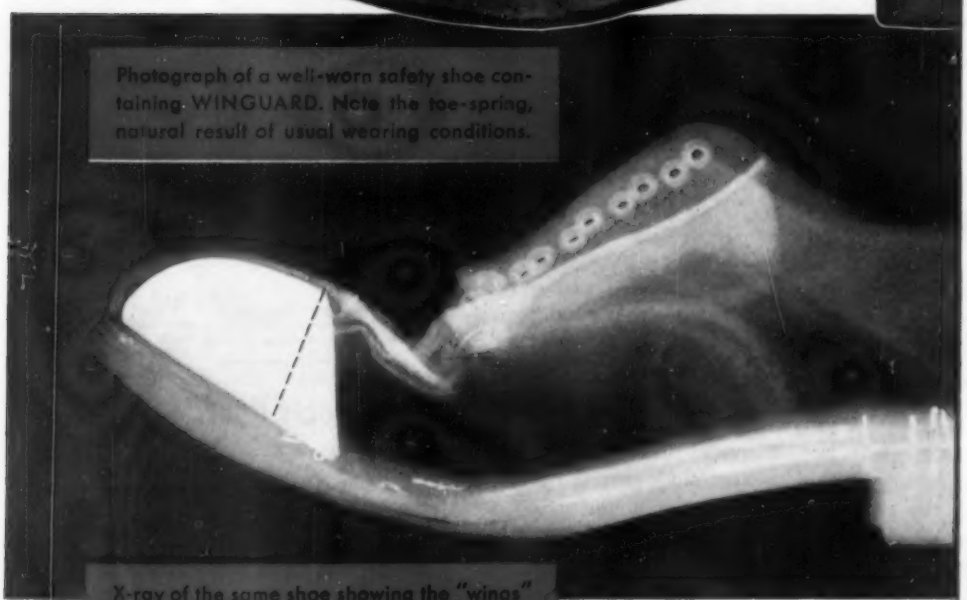
We concede that no safety box toe can be made regardless of its basic steel, its gauge, or its profile that can not be collapsed by unusually extreme striking force. As we see it, the job of a steel safety box toe is to reduce as far as possible the potential of the accident — to be so protective as to cause an important percentage of amputations to become fractures, and fracture cases to become abrasions, and in innumerable instances of lesser accident save the wearer from as much as a bruise. Since the best steels are already in use and since increased gauge means wearer discomfort from weight, only architectural improvement can make steel toes safer. Toes that resist back-tipping — that buttress the toe dome under extreme toe-spring — that present greater bearing surface against the shoe upper in resisting lateral spreading — may well mean the difference between minor and serious injury to the wearer. Such toes are available to your safety shoe supplier. They are known as WINGUARDS.

400
FOR SAFETY DRESS SHOES

500
FOR SAFETY WORK SHOES

story that counts

Photograph of a well-worn safety shoe containing WINGUARD. Note the toe-spring, natural result of usual wearing conditions.



X-ray of the same shoe showing the "wings" of WINGUARD still fully supporting the toe dome. Dotted line indicates the back edge position of non-wing types after toe-spring has forced the dome area to overhang the toe members.

WINGUARDS

safest steel box toes

SAFETY SHOE MANUFACTURERS LICENSED TO USE WINGUARD STEEL SAFETY BOX TOES
as of Jan. 1, 1952

UNITED STATES

Allen-Squire Co.
Spencer, Mass.
G. H. Bass & Co.
Wilton, Maine
Belleville Shoe Mfg. Co.
Belleville, Illinois
Curtis Shoe Co., Inc.
Marlboro, Mass.
Charles A. Eaton Co.
Brockton, Mass.
Endicott Johnson Corp.
Endicott, N. Y.
General Shoe Corp.
Nashville, Tenn.
Georgia Shoe Mfg. Co.
Buford, Georgia
Joseph M. Herman Shoe Co.
Millis, Mass.
Hill Bros. Co.
Hudson, Mass.
Holland-Racine Shoes, Inc.
Holland, Michigan
International Shoe Co.
St. Louis, Missouri
Iron Age Division
H. Childs & Co., Inc.
Pittsburgh, Penn.
Knapp Bros. Shoe Mfg. Corp.
Brockton, Mass.
Leverenz Shoe Co.
Sheboygan, Wisconsin
J. F. McElwain Co.
Nashua, N. H.
Milwaukee Shoe Co.
Milwaukee, Wisconsin
Museback Shoe Co.
Oconomowoc, Wisconsin
A. H. Weinbrenner Co.
Milwaukee, Wisconsin
Wolverine Shoe & Tanning Corp.
Rockford, Michigan

CANADA

J. A. Blais, Inc.
St. Casaire, P. Q.
G. A. Boulet, Limited
St. Tite, P. Q.
Canada West Shoe Mfg. Co., Ltd.
Winnipeg, Manitoba
J. A. & M. Cote, Ltd.
St. Hyacinthe, P.Q.
Daoust, Lalonde, Inc.
Montreal, P. Q.
Frontenac Shoe Ltd.
Quebec City, P. Q.
The G and B Shoe Co.
Campbellford, Ont.
Grab Shoe Co., Ltd.
Kitchener, Ontario
Hydro City Shoe Mfrs. Ltd.
Kitchener, Ontario
Palmer-McLellan Shoe Co., Ltd.
Fredericton, N. B.
The T. Sisman Shoe Co., Ltd.
Aurora, Ontario
The Stag Shoe Co., Ltd.
Montreal, P. Q.
Sterling Bros., Limited
London, Ontario
Tetrault Shoe Ltd.
Montreal, P. Q.
The Tillsonburg Shoe Co.
Tillsonburg, Ontario
Underhills' Limited
Barrie, Ontario
Valentine & Martin Ltd.
Kitchener, Ontario
Williams Shoe Ltd.
Brampton, Ontario

SAFETY BOX TOE COMPANY
812 Statler Office Building
Boston 16, Massachusetts

subsidiary of
Beckwith Manufacturing Company, Dover, N. H., sales agents for the United States. Canadian sales agents: Beckwith Box Toe Ltd., Sherbrooke, P.Q.

(Advertisement)

Actually, we have no records of kangaroos using Ansul Extinguishers . . . but we know children of grade-school age can use them effectively. Ease of operation and near-expert results by inexperienced operators have influenced many large companies to standardize on Ansul Equipment.

Ansul Extinguishers are also easy to recharge and maintain. They may be recharged at the scene of the fire without using any tools . . . not even a screwdriver or wrench is needed. Water-tight construction and corrosion resistant construction assure long life with a minimum of repairs.

SEE PAGES 16 & 17

Corrosion-Resistant Coating for Oil Tanks

A MAJOR oil company is coating 24 of its giant steel oil storage tanks with an anti-corrosion system based on Vinylite resins, it was announced at the National Association of Corrosion Engineers' Seventh Annual Conference and Exhibition in New York. Adopted after several years testing, the system consists of five coats of Vinylite resin-based paint which resist corrosion from weather, water, and most chemicals. By creating a relatively flexible film with exceptional abrasion resistance, this base material also resists corrosion-inviting breaks in the coating caused by constant working and buckling of steel plates as the tank deck rises and falls.

Exterior surfaces of the tank and floating deck and the top three feet of the tank interior—all that is exposed when the tank is filled and the floating roof is up—are first sand-blasted down to grey steel. A metal conditioning coat is first sprayed on, followed by a single heavy coat of anti-corrosive primer. Three finish coats are then applied, ending with an aluminum pigmented clear vehicle. Each of the coatings is based on Vinylite resins and covers about 300 square feet per gallon per coat. The five-coat system provides a coating approximately .0045 of an inch thick. Over the five-coat system, a special Vinylite resin-based skid-resistant black coating has been used on the walkway and steps (see picture). Test applications of the five-coat system are still in good condition after six years of exposure to the same conditions to which the oil tanks are subjected.

Picture by courtesy of Bakelite Company.

Fire Shutters for Moving-Stair Openings

"FIRE Resistance of Shutters for Moving-Stairway Openings," by Nolan D. Mitchell, Edward W. Bender, and James V. Ryan, is the title of a new National Bureau of Standards Building Materials and Structures Report 129, available for 10 cents from the Government Printing Office, Washington 25, D. C.

Since moving stairways are used extensively in commercial buildings in which unprotected openings through floors might permit the passage of fire, shutters for closing such openings must be adequately fire-resistant. The information contained in this report should interest architects, the building industry, and regulatory bodies concerned with specifications or building-code requirements pertaining to moving-stairway installations.

Many moving-stairway openings are to be found in buildings having large patronage, predominantly combustible contents, and high-value occupancy. This report gives the results of NBS tests on one method of protection of these openings.

One exploratory and two full-scale fire-endurance tests were made on flexible rolling shutters for closing moving-stairway openings. The test specimens in the latter two tests included the balustrading of a normal installation. The shutters were made of galvanized steel slats moving on rollers and were of the same design in all the tests. The shutters could be operated by hand or by power drive.

Foreign remittance must be in U. S. exchange and should include an additional one-third the publication price to cover mailing costs.

Blast Effects Conf.

(From page 31) the University of California is being sponsored jointly by the Earthquake Engineering Research Institute—an independent, non-profit organization devoted to research and study on earthquake effects on structures—and the Department of Engineering at the University.

Designed to stimulate interest in the study of earthquakes and blast effects, the conference will make available to those engaged in planning, design, construction, and operation the latest research results and professional developments in dynamic response of structures to earthquake and blast.

Requests for application forms or for further information should be

MORE CLEANING POWER TO THE INCH with *Specialized* HILLYARD CARE

Improves floors judged "clean" by ordinary methods

The section of floor left, maintained by ordinary methods, might "get by" on casual observance—but when compared to the bright clean appearance of the Hillyard-treated floor right—it's easy to see where "skim-the-surface" methods fail—and *specialized* Hillyard methods succeed.

What you see in the darkened (before) half—is the day by day "pile up" of dirty, grimy, soapy, oily residue left by ineffectual maintenance—and it's the wearing, tearing action of this ground-in dirt or harsh powder that deteriorates sensitive floor surfaces.

AFTER Hillyard's safe wetting action has cut through the tough dulling film—you get the renewed lustre of the original floor surface—and you cut your labor time in half.

SUPER SHINE ALL, Hillyard's neutral chemical cleaner used on floor pictured, with extra fast wetting acceleration, dissolves dirt by 100% cleansing action that emulsifies oils and greases. Eliminates rinsing which reduces cleaning costs up to 30%. (One of the few cleaners on the market with U/L approval "anti-slip."

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See This Difference On Your Own Floors

Mail this Coupon TODAY!

FLOOR HILLYARD TREATMENTS

A HILLYARD FLOOR EXPERT WILL BE GLAD TO ASSIST YOU

A complete staff is serving a nationwide area. If you're having trouble with any floor problem call the Hillyard Maintaineer nearest you.

On Your Staff, Not Your Payroll

St. Joseph, Missouri BRANCHES IN PRINCIPAL CITIES

Hillyard Chemical Company, St. Joseph, Mo.

Yes—I want to *benefit* by Hillyard's specialized floor cleaning methods. Please send free literature on the proper care of:

☐ cement ☐ terrazzo ☐ asphalt
☐ wood ☐ rubber ☐ tile

*Name*_____ *Title*_____

*Institution*_____

*Address*_____

*City*_____ *State*_____

addressed to the Summer Sessions Office, Attn.: Building in the Atomic Age Conference, Massachusetts Institute of Technology, Cambridge 39, Massachusetts, or to the Department of Conferences and Special Activities, University of California, Los Angeles 24, California.

No Blue Flames

(Continued from page 25)

out the United States and Canada.

Detector Meets Safety Requirements

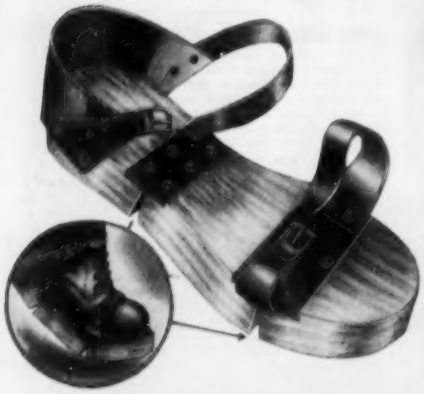
The design of these virtually explosive-proof installations was simplified considerably because the detector unit inherently meets the safety requirements of the National Electric Code of the National Fire Protection Association for use in atmospheres containing explosive vapors. The safety requirements for wiring these installations were completed by enclosing the leads from each detector in an explosion-proof connection box threaded directly onto the upper end of the detector. In addition, all wiring, panels, and warning devices in the system located in the still room were suitably enclosed or shielded.

To enable Schenley engineers to obtain a firm, leak-free mounting for the detectors in the thin duct wall, the manufacturers provided a special modification of the standard fire and heat detecting assembly. The units were assembled with a full coupling, so that the lower half of the coupling could be threaded into a bushing in the duct wall. The upper part of the coupling, which extended outside the duct, provided mating threads for the explosion-proof connector box.

The detector represents a unique application of the differential expansion of metals. Its special design produces an effect known as "rate compensation." Rate compensation causes the detector to function consistently at its pre-set operating temperature regardless of the rate of rise in the temperature of the surrounding medium. Equally important, the unit operates when the temperature of the surrounding *medium* reaches the set-point temperature. An unusually rapid response is obtained because it is unnecessary for the unit itself to heat up to its operating temperature.

The stainless steel shell of the unit serves two purposes: (1) it functions as one of the expanding components; (2) it provides a hermetic housing for the internal expanding component that consists of a pair of low-expansion metal struts assembled under compression. Mounted on the struts, but insulated from them, is a pair of silver contacts, each of which is connected to the circuit by means of a hermetically-sealed lead through the cartridge head. A rise in temperature causes the outer shell to expand, reducing the compression on the struts, and allowing the contacts to close when the pre-set operating temperature is reached.

AN IMPROVED REECE
"Hot Foot Sandal"



No. 351—For hot steel. Straps on quickly over any shoe. Heat proof—puncture proof. One inch thick seasoned wood. Two strong sole leather hinges. Sturdy leather counter-adjustable leather straps. Sizes—Small—Medium—Large.

STRONG STEEL TOE

No. 504-S—Reece All-Purpose Shoe with durable leather uppers, steel toe, Reece "PERFECT ROCKER" Wooden Sole. Safe, reliable, dependable for factories, platers, oil refineries, foundries, steel mills. Also other styles.
Sizes—5–13. No half sizes.

Write for
COMPLETE CATALOG

REECE
WOODEN SOLE SHOE CO.
There is no substitute for Reece Wooden soles

SM & P-6 COLUMBUS, NEBRASKA

SAFETY MAINTENANCE & PRODUCTION Salutes a Safety Idea for JUNE

Nuts About Safety

THE never-ending drive to keep everyone engaged in industrial production "safety conscious" was given a new twist at the works of Dominion Bridge Company Ltd., Lachine, Que., recently. An inter-departmental contest, as part of a periodic campaign, called for each shop to design for itself a "Safety Crest" which would symbolize its interest in accident prevention. The results of this contest were truly amazing. Twenty departments submitted designs and all were of a high standard. An idea of the type of crest developed may be obtained from the accompanying illustrations.

The rules for the contest were simple:

1. The outline of the crest had to conform to one of two predetermined shapes.

2. The crest had to contain something descriptive of the department of its work.

3. The design had to employ a safety slogan and the "green cross" generally recognized as the symbol of safety.

It was also suggested that the design should be the work of a group rather than of one individual.

A lively interest was developed in all sections of the plant. In some departments each man was issued a miniature outline on which to jot down his ideas. All ideas were then considered by a shop committee, headed by the foreman, which made the final choice for the department. A man with originality and ability to sketch neatly was assigned to help any foreman requiring assistance to put ideas into shape. This contributed greatly to the smooth running of the contest.

Twenty sketches, as finally agreed upon by the foremen and their committees, were deposited at the Safety Office as formal entries. Only one entry was accepted from each department. All sketches were turned over to a Dominion Bridge employee who has considerable artistic ability. He reproduced the sketches to full size (about 22" x 22") and in color in his spare time. All departments were thereby given equal opportunity to have their crests prepared in an attractive manner.

Upon completion of the work of preparation the crests were placed on display in the Plant Meeting Hall and viewed by the employees. An impartial committee then judged the crests for originality of design and slogan, and general effectiveness as a Safety message. The crest receiving highest credit was that submitted by the company's Bolt Shop which, with an apt sense of humor, bore the slogan "We're Nuts about Safety."

Industrial Foot Surveys

THE Van Norman Company has been designated as the first industrial plant in Massachusetts to be the subject of an industrial foot survey in which a spot check of its 1500 employes will determine the percentage of existing foot disorders, it was announced recently by Leon H. Hutchins, director of personnel.

The survey, sponsored by the National Association of Chiropodists, is being made by a group of 20 members of the Western Division of the Massachusetts Chiropody Association.

Industrial foot surveys have been made in a number of large manufacturing plants in various parts of the nation. The one at Van Norman Company will be watched with interest. It may be followed by similar surveys at other progressive industrial plants in this area.

Over the nation within the last few years such firms as DuPont, General Motors, Owens-Illinois Glass Company, the Henry Kaiser enterprises, large department stores like Filene's in Boston have established foot clinics. The New York Telephone Company was the first big company to establish a foot clinic more than 20 years ago.

With industry spending millions yearly on industrial health service it is felt that the additional cost of chiropody is trifling when compared with the improvement in health and the morale of employees as a result of instituting professional foot care. Industry is interested in determining the percentage of foot problems with reference to their relation to morale, efficiency, production and the accident ratio.

As an example of the manner in which a foot survey such as that planned for Van Norman brings to the attention of the management conditions that exist, the case of one large company is cited. During the survey 503 employes were examined. Of this group, 225 had complaints and foot disorders, while among 222 examined, and who had not voiced a complaint, definite symptoms were found. Of the total surveyed, only 56 had no complaints and no foot disorders. The 503 examined consisted of 304 male employes and 199 female.

During a survey of the auto, chemical, trucking, hotel and restaurant and department store fields, it was found that nearly 70% of all workers have "aching feet" and that one in 10 has trouble so serious that it causes him to be absent from work from two to seven days a month. It was found that in the auto industry, the percentage of workers with foot ailments runs as high as 50 per cent. The chiropodists who made the survey found that one in every four workers gets "afternoon fatigue" because of foot trouble, with tight shoes as the principal reason. One out of every four men and two out of every three women wear ill-fitting shoes, it is claimed.

wear a

Dupor No. 24

The Respirator that is U.S.B. of M. Approved for Type A Dusts

More than 24 sq. in. twin filter area. Sanitary face cloth. Soft rubber face mask. Has all patented DUPOR features including bulb valve-controlled breathing—panorama view with no blind spots. A favorite for years!

Sample sent $3.00 p.p.

wear a

Dupor No. 46

U.S.B. of M. Approved Respirator for Type A and Lead Dusts

More than 46 sq. in. filtration area. Soft rubber face mask. U.S.B. of M. Approval BM-2124 for LEAD Dusts and ALL other toxic or poisonous dusts as well as Type A (Pneumoconiosis or Silicosis-producing dusts). Unit has exclusive controlled breathing valves to guard against stale air. Maximum visibility—no interference with goggles or glasses.

Sample sent $3.25 p.p.

For the best in eye protection get H. S. Cover's Gas-Tight, Fog-Proof Goggles.. $2.00 up.

H. S. COVER, South Bend, Ind.

TRANSPORTATION

Know the Laws

"MOST fatal traffic accidents should not be called 'accidents' because in 60% of the fatal accidents, one or more of the parties involved was violating a traffic law." The Executive Secretary of the North Carolina Motor Carriers Association, J. T. Outlaw, made this statement while announcing the North Carolina's participation in the National Courtesy and Safety Program of the American Trucking Associations, Inc.

"We are stressing the importance of knowing and obeying traffic laws," stated Mr. Outlaw, "not only for our own people, but for the benefit of the motoring public as well.

"The professional truck driver has to be familiar with the traffic laws throughout the territory in which he drives—and they include a lot of detail which doesn't concern the average passenger car driver," Outlaw continued. He said he felt certain that it was to the motorist's own best interests to get acquainted with basic rules governing all traffic in his home town and the surrounding area in which he drives frequently.

The state trucking industry spokesman went on to point out that merely knowing the rules is not enough. "Remember," he concluded, "traffic laws are for the benefit and protection of all drivers as a group. Without the rules, we would be in a bad way."

Driver Training Booklet

A NEW 16-page publication, "Driver Education for Adults," describes briefly the various types of programs for the training of adult drivers. These include public programs, such as evening school courses, traffic court schools, and programs for training school bus drivers; and private offerings, like commercial driving school courses, YMCA classes, refresher courses sponsored by insurance agents' associations, and the advanced training programs of transit systems and commercial fleets. In addition, the booklet lists selected training films and publications that can be used in the development of local programs.

Ten thousand copies of the booklet are being made available to the 48 states for use by state agencies concerned with traffic safety and driver education. The objective of this type of work is expressed by Herbert J. Stack, Director of the Center for Safety Education, in his introduction to the Center's publication: ". . . activities described in this pamphlet are destined to grow and reach larger and larger sections of the adult population. Through active, coordinated interest, each community can speed this progress of growth and help to insure a truly effective traffic safety program."

Individual copies of the booklet may be secured at the cost price of 15 cents per copy, which includes postage. Orders should be addressed to: Center for Safety Education, New York University, Washington Square, New York 3, N.Y.

New Classification for Lubricating Oils

THE new system of service classifications and designations for automotive lubricating oils has been announced by the Lubrication Committee of the American Petroleum Institute.

The new nomenclature was approved by the API board of directors at a meeting in Tulsa, Okla., recently. It had been approved previously by the API's Marketing Division, by the American Society for Testing Materials, and the automotive industry.

The new classifications were devised after it became apparent that advances in additive-treated motor oils had made existing crankcase oil terminology inadequate and obsolete. The new classifications are as follows:

Service MS: Service typical of gasoline or other spark ignition engines operating under unfavorable or severe types of service conditions and where there are special lubrication requirements for deposit or bearing corrosion control, due to operating conditions or to fuel or to engine design characteristics.

Service MM: Service typical of gasoline and other spark ignition engines operating under moderate to severe service conditions, but presenting problems of deposit or bearing corrosion control when crankcase oil temperatures are high.

Service ML: Service typical of gasoline and other spark ignition engines operating under light and favorable service conditions, the engines having no special lubrication requirements and having no design characteristics sensitive to deposit formation.

Service DG: Service typical of diesel engines in any operation where there are no exceptionally severe requirements for wear or deposit control due to fuel or to engine design characteristics.

Service DS: Service typical of diesel engines operating under extremely severe conditions or having design characteristics or using fuel tending to produce abnormal wear or deposits.

Groundwork for the new system of classifications was laid by a special Lubrication Committee panel headed by George Round, of

Socony-Vacuum Oil Co., New York. The nomenclature now makes it possible for consumers to choose crankcase oils with a common denominator of engine design and application.

Emergency Traffic Control

WHATEVER the form of attack—atom bomb, H-Bomb, or bacteriological, and whatever the immediate repercussions—fire, flood, rubble, panic—the roads will be kept open and the men and goods will be kept moving.

This is the goal of a training program in civil defense emergency highway traffic operations developed by the Traffic Institute of Northwestern University and thoroughly tested in a recent two-week seminar for civil defense officials from all parts of the country.

Conducted at the Traffic Institute in Evanston, Ill., under contract agreement with the Federal Civil Defense Administration, the seminar was attended by 28 top police, traffic engineering, and transportation officials. The training program, developed earlier for the Federal Civil Defense Administration by the Traffic Institute with the assistance of a select committee of technical experts, will be used in the training of regional civil defense personnel throughout the country. The "trial-run" seminar was conducted to insure the real effectiveness of the training by exposure to the best available civil defense thinking, according to Franklin M. Kreml, director of the Traffic Institute.

Commenting on the training program, Mr. Kreml said, "The major purpose of all civil defense emergency operations must be to keep us going. Our industrial economy must be kept moving as close to top efficiency as possible. It is with this purpose in mind that we have built this training program in emergency highway traffic operations. We must understand what is likely to happen, we must know what is to be done when it does happen, and we must develop the technical know-how for doing it. The training experience of this seminar gives us real hope that, if and when the need arises, we can succeed in the accomplishment of our purpose."

Five courses to be conducted on a regional basis are already tentatively scheduled for presentation to police-engineering-transportation civil defense teams during the remainder of 1952, and two others for the early part of 1953. The first of these regional courses will be presented at the Traffic Institute in Evanston, as will one other. The remaining five courses on the present schedule will be presented in other sections of the country.

Safety Essential to Highway Transportation

WILLIAM F. HUFSTADER, General Motors Vice President in charge of the Distribution Staff, was elected chairman of the Inter-Industry Highway Safety Committee for the coming year at a meeting of the committee in Detroit. He succeeds J. J. Newman, Vice President of the B. F. Goodrich Company.

The committee, operating chiefly through state and local dealer safety committees and organizations, encourages and supports safety programs based on the recommendations of the President's Highway Safety Conference. It has been especially active in encouraging the expansion of high school driver education, the development of better driving practices, and urging motorists to maintain vehicles in safe operating condition. The committee is sponsored by automobile and tire manufacturers and the National Automobile Dealers Association.

At the meeting, the Inter-Industry Highway Safety Committee also voted to expand its activities to include support of sound highway development. As a first step, it was decided to join other national organizations which have formed the National PAR ("Project—Adequate Roads") Committee.

"Safety cannot be divorced from other phases of efficient highway transportation," Mr. Hufstader said in announcing expansion of the committee's program. "The public interest demands that all elements of today's serious traffic situation be attacked by a coordinated effort that will simultaneously reduce hazards, congestion and other problems. Our committee plans to continue its activities with specific, hard-hitting programs for dealer action in every state and community."

Heavy Accident Toll

NEARLY two million casualties, the worst automobile accident toll in the nation's history, were recorded in 1951, according to figures released recently by a leading insurance company.

Last year's traffic deaths totaled 37,100, an increase of 1600 over the 1950 mark. The injury count soared to 1,962,600, more than 160,000 over 1950, the firm reported.

More than 13,000 persons were killed and 570,000 injured last year by drivers who were exceeding the speed limit, according to the report. Excessive speed was "far and away the most dangerous mistake in driving" in 1951.

More than 11,000 drivers under

Glamour Glasses

Extraordinary Features

Introduced a little more than a year ago, these unusual Industrial glasses are now rendering service in plants from coast to coast. They are greatly preferred by workmen because they have every appearance of expensive prescription glasses. Just consider these features:
(1) Transparent amber color has the glamourous appearance of prescription glasses. (2) Flat steel spring, ¼" wide, embedded in demi-plastic moulded paddle-type temples. (3) Ends of temples are grooved or serrated to add comfort. (4) The embedded spring in the temples may be bent to fit the face and keep the glasses firmly in place. (5) Optical hinges. (6) Each pair supplied with tuf plastic leather-finish case.
No. 603—Men's Size. Large, easily replaced 48 x 51 m/m Drop Eye Clear XL Hard 1.25 or 6.00 Diopter curve lenses.
No. 604—Women's size. Regulation 44 m/m drop oval (42 x 45 m/m) lenses. Also available with Green Sel Hardened lenses.

Industrial Spectacles with Side Shields

Nickel frame, plastic covered temples, adjustable perloid nose pad, 50 m/m diopter round lenses in five types. (1) Clear 1.25D XL Hardened, (2) Sel Green 1.25D Hardened, (3) Clear Flat Heavy, (4) Clear Flat Sel Safe Laminated, (5) Clear Flat Sel Hard.

No. 3001—Perforated leather side shields
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25 years old were involved in fatal accidents and 416,000 more in personal injury accidents, the figures reveal.

Pedestrian experience in 1951 is termed "an island of encouragement in last year's ocean of accidents." A comparison of 1951 with 1950 shows that pedestrian deaths were "held in check" while injuries were reduced by nearly 9,000.

Other facts from the report:

Saturday was the most dangerous day of the week to drive.

More persons lost their lives during the hour from six to seven p.m. than in any other hour. Injuries hit their peak two hours earlier, from four to five p.m.

Ninety per cent of drivers involved in 1951 accidents were males.

Ninety-seven per cent of drivers involved in 1951 accidents had at least one year of experience behind the wheel.

Thirty-eight per cent of last year's fatal accidents occurred on the open highway.

There were 92 per cent more fatal accidents on icy roads last year than in 1950.

Aluminum Windows

(Continued from page 35)

specifying aluminum windows which will provide the safety and maintenance features presented in this article.

In the development of the aluminum window industry, as in all industries in America, competition in a normal market is the key to controlling prices, and of course, to the man who makes the best product at the lowest cost will go a large share of the market. However, it is always a temptation on the part of a few to cheapen a product to the point where it may not measure up to the safety and maintenance standards desired.

To protect the consumer, the Aluminum Window Manufacturers Association has developed basic standards for aluminum window architectural specifications. Today, "specs" are available covering double-hung, casement and projected-type windows.

There are no restrictions on how good an aluminum window can be made. A copy of these specifications may be secured without charge by writing the Aluminum Window Manufacturers Association, 74 Trinity Place, New York, N. Y. Eighteen members of the AWMA, responsible for approximately 80% of all the aluminum windows made, support these standards through the Association's "Quality-Approved" Seal program. This seal, a guarantee to the safety director, architect, contractor and general manager, is available to any window manufacturer (whether a member of the Association or not) who will meet and maintain the required standards of the Association.

Availability

Of course the basic question, in view of the defense situation, is: "Can I get aluminum windows for either replacement or new construction?" Aluminum for fabricating windows is available under CMP regulations. It is suggested that those who are planning new plants and who are interested in aluminum windows contact the various aluminum window manufacturers.

According to the Aluminum Window Manufacturers Association, aluminum windows are available now with normal specification lead time allowed. Further, they will be available in the future when needed—along with the continued reasonable flow of aluminum under CMP regulations.

Pictures by courtesy of Aluminum Window Manufacturers Association.

The ACCIDENT MONTHS Are Coming Up. Get Help Now from
What's New—pages 71–73
Free Bulletins—page 70
Check List—page 76

Management Faces Test to Keep Control of Industrial Safety

INDUSTRY may be facing its last chance to keep accident prevention a voluntary activity, The American Society of Mechanical Engineers heard at its 72nd annual meeting.

Cyril Ainsworth, technical director of the American Standards Association, said the issue has been put squarely up to industry as a result of suggested programs and activities which have been established by the President's Conference on Industrial Safety and left to management for execution. Mr. Ainsworth, who has been active in accident prevention for more than 30 years, said, "So far the President's Conference, in the way it has been conducted by the governmental agencies and officials charged with that responsibility, has shown no tendency to drive for controls of the accident prevention activities of the country. It has shown no tendency to usurp the prerogatives of any other organization. It has not operated to get support for legislation designed to give agencies of the Federal government any control or regulatory or enforcement powers. It has operated in true free enterprise methods of cooperative work between industry, labor and government."

Management Accepts

The success or failure of the conference rests largely upon the shoulders of industry, Mr. Ainsworth declared. He said that policies, programs and practices established by the conference and agreed to by management through its representatives, have been presented for the voluntary use of all concerned. The big question is, what management intends to do about these recommendations.

Mr. Ainsworth said that, thus far, management has accepted this opportunity and is putting many of the policies of the conference into use. "The small plant, trade association and government agency programs of the National Safety Council are good examples to prove the point," he said. "The recommendations on the very ticklish subject of labor-management relations in safety are being tried out. This is all to the good and if continued will keep accident prevention in the free enterprise system where it rightfully belongs."

He added, however, "Among other policies and programs agreed to in the President's Conference are some which affect, very vitally, the important relations of industry and government, and it is in connection with these matters that management's future actions will dictate whether it has continuing chances for voluntary exercising of its responsibilities or if the present is industry's last chance."

Mr. Ainsworth said that the President's Conference has called for the development of new safety codes on subjects for which no standards exist. This was done with the "strong implication" that if the "normal leadership of industry in accident prevention work" were not forthcoming and if the new codes were not made up, "other means" for development of the codes would be found.

After the Conference had requested ASA to make a survey of the need for new safety codes and to initiate projects for their development, an ASA committee recommended that ASA invite industry to send it technical information which might be considered by the groups concerned in the develop-

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ment of the new codes. Mr. Ainsworth said industry's store of such information was vast.

Industry's Response Awaited

This procedure has been approved by the President's Conference, and industry will be invited by ASA to forward the required information in the near future. Everything hinges on industry's response.

Responsibility for the development of safety codes and for the maintenance of the voluntary system of American industrial operation does not rest solely upon the shoulders of management, but must also be assumed by labor.

Mr. Ainsworth stated, "The time has come when labor must couple its agitations for more and more accident prevention work with constructive action of its own. There are signs that this point of view is understood in some labor circles. Some labor unions are building accident prevention programs but this start at the moment is on a very small scale indeed. Labor can do much to educate its own people as to its own responsibilities, the responsibility of the individual workman to those with whom he is associated in his daily operations. The best techniques in performing tasks are those which will permit the task to be performed without accident.

"Labor can institute courses in self-improvement in task operations which can instil the safety habit in the minds of the worker. Labor should not fail to seek the cooperation of management in the establishment of such courses in order that the best possible technical instructions will be available. These are just a few of the ideas which might be enumerated to indicate avenues of approach whereby labor can assume much responsibility for future accident prevention work in industry."

The great humanitarian benefit derived from a good safety program is also good business, he declared. "It has been proven to our satisfaction that the efficiency of an operation is greater where the safety performance is better. The two unquestionably go hand in hand."

He pointed out that there is some belief that small businesses cannot afford a safety program, but declared, "I do not believe they can afford to be without it. It seems to be quite clear that the essential thing is for the top management to believe thoroughly in the safety movement, and if this is so, ways and means can be found to carry it out through the regular line organization."

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You Can't Afford To Be Without Safety

AN ESTIMATED 38,000 du Pont employees escaped injuries in the company's plants over the past quarter of a century because organized safety activities prevented the accidents from happening, according to Emile F. du Pont, director of the company's Employee Relations Department, which includes safety work in its activities. Mr. du Pont spoke at a luncheon meeting of the annual Accident Prevention Conference in Columbia, S. C., sponsored by the South Carolina Industrial Commission.

"We believe in the philosophy of preventive safety rather than after the fact correction," he explained, adding, "we are more interested in eliminating the chance for injury by working safely, with no violations of good practice, than by setting records."

The record takes care of itself when safe practices are followed, he said. The company's frequency rate of injuries last year was 0.72 for each million man-hours worked, which meant that more than 99.8 per cent of its employees went through the year without a single lost-time injury.

Mr. du Pont used the company-wide safety records as background in telling the conference how the results were accomplished.

"The first and most important principle we believe in is that top

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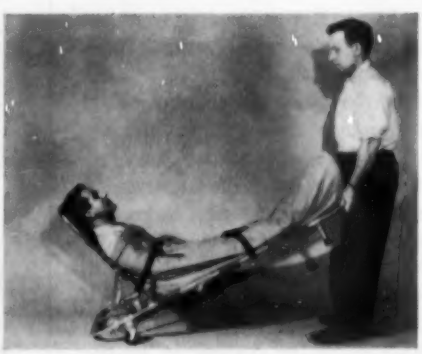


management must have a sincere belief in the safety movement in industry and a keen desire for outstanding accomplishment," he declared.

"We believe in the establishment of fair and equitable safety rules, and the strict enforcement of them," Mr. du Pont said. "If we are reasonable but firm on violations before an injury occurs, employees believe we mean safety and are not just after a record."

Another important phase is well-thought-out and thorough training programs for new employees. By teaching correct work habits, they not only contribute to efficient operation but avoid habits which are unsafe.

Further, in the design stage of a new plant or operation, safety engineers work closely with design engineers "to insure that the equipment has all the safety features that can be thought of."

Good safety performance results not so much from the system or mechanics "but rather the sincere day-to-day on-the-job management philosophy which indicates to our employees that we really mean safety first," he declared.

Off-the-Job Safety

(Continued from page 13)

make it a function of business. When we can make management realize that a great many of the accidents which plague industry today are actually founded in the home, on the streets, or somewhere else outside of the company's premises, management is certain to ask how and why. When we explain how an individual who is emotionally upset as a result of some experience outside of the plant becomes a potential accident victim within the plant or even worse, can endanger the safety of others, management is going to want to know more. It is then that the well-organized plan will receive the full and complete consideration of management.

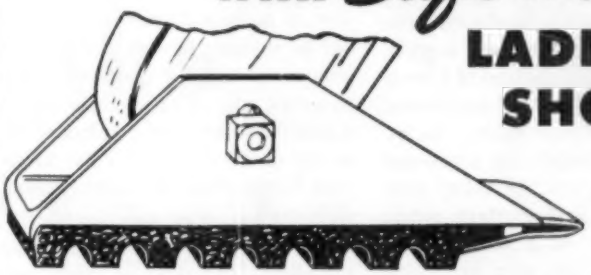
To be able to organize and present such a plan, however:

1. The safety engineer himself must have the ideas and desires and also be community-safety-minded as well as plant-safety-minded.
2. The safety engineer must understand what he is planning to do and be in a position to present to management a comprehensive and convincing story of the benefits which will result.

Safety engineers have their own industrial safety programs and the success which has rewarded their efforts is a matter of record for all to see. The accident rates in industrial plants have been sharply reduced, and now it is time to add emphasis to new areas of activities such as traffic, farm, and home safety. Each in itself is a safety program and to unite these into one, comprehensive, planned safety program should be their objective. *The broad concept of community safety is their ultimate goal.*

The planned safety program is

Safe WORK with Safe-Hi LADDER SHOES



Ladders were made to lean, and leaning ladders tend to slip. Attach Safe-Hi Ladder Shoes and work safely—at any height.

SAFE-HI

Ladder Shoes have a four-way grip:

1. Rubber tread holds on any dry surface.
2. Cord filling in tread grips wet or oily surface on which rubber will slip.
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like a cake and the extension of this plan into the community is the frosting. Each in itself is good, but combined they are better and result in a finished product. The same is true also of several new protective devices and equipment that have been and are being developed from time to time. Each in itself is good, but it takes a combination of a number of these devices and equipment to provide adequate safety. In extending his activities into a community safety program, the safety engineer becomes an important public relations man. As a result of his experience, he can give invaluable counsel on safety procedures to be followed at parks, playgrounds, school boards, swimming pools, and traffic areas. He can make himself valuable to civic government departments and give qualified testimony on problems related to local safety issues, which require continuing attention. He can work with the local police and fire departments in developing and compiling information on traffic conditions and contribute his knowledge of fire protection activities. Very often the safety engineer is better equipped to analyze fire protection requirements than are the local fire departments. He can also contribute greatly to encouraging better safety habits on the part of individuals both young and old by making himself available to groups in schools, service clubs, churches, etc. The organization of school boy patrols is a splendid example of what can be done to reduce the accident rate among school children.

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By organizing and pooling the knowledge and skills of safety personnel in other industries, he can help not only his own safety program but also aid other safety engineers in the community with their problems. Through local safety organizations, reciprocal agreements can be undertaken whereby one safety engineer can invite the cooperation of some other member in evaluating problems which arise from time to time. The organizing and pooling of skill and knowledge of safety personnel and the helping of one another with their problems creates better public relations, community- and industry-wise. Since safety engineers have a common objective; they should pool their efforts to achieve this goal.

Another excellent service which local safety councils are providing is the exchange of ideas and the use of pertinent examples and specific patterns of safety procedures. Such groups, representing a variety of industries, can do much towards improving the community safety record. They can stimulate interest in first aid, accident prevention, life saving, home and seasonal hazards, and other phases of safety. They can invite service clubs and even the Chamber of Commerce to cooperate with them in the sponsorship of such programs.

What One Company Has Done

Perhaps a good example of what industry can do in the community is best described by the work which our company is doing at the present time with its Rescue Squad. The company has provided the necessary equipment at a cost of approximately $8,500. Twenty-one employees have volunteered their services, and these men have been trained in rescue and life saving techniques during the working hours. This squad is available to anyone in the twin-cities and the surrounding areas free of charge, 24 hours a day, 7 days a week. The squad combines several good features some of which are good community relations. And there is the satisfaction our employees get in being able to help individuals outside of the company. To many of the members it has provided a valuable hobby.

The activities of the Rescue Squad have been publicized nationally and we feel that the squad is doing a good public relations job not only in our community but also wherever the story of the squad has appeared in print. It stands by itself in maintaining community approval and acceptance by the company. Each life saved, and there have been several, adds to the company's stature. Can you think of a better way to combine community service, employee relations, and public relations more effectively? The squad is an important part of the community and this is proved by the frequency with which it is called whenever an emergency arises. At all civic functions it stands by, ready to give immediate service should the need arise, and its services are both recognized and accepted by local police and fire departments and by the telephone companies, the sheriff's department, etc.

Health and safety cover a broad field in both industry and the community, and without question the safety engineer has a responsibility which cannot be defined in terms of working areas. Equally important, however, is the part the safety engineer plays in gaining recognition and acceptance of his ability and qualifications. The health and safety of every employee and his family is an important factor in plant safety. Irregularities which result in accidents within the plant can be traced

(Continued on page 54)

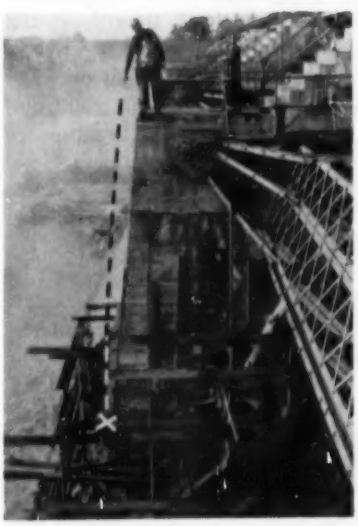
THE GUN THAT WASN'T LOADED

RECENTLY an employee of a junk yard was cutting strips from an empty gas tank with an acetylene torch when accumulated fumes in the tank exploded. The operator was seriously injured, putting him on the disabled list for over six weeks. This is an all too familiar accident and one that can easily be prevented by adhering to the simple safety rules when using an acetylene torch on containers formerly used for handling flammable liquids. Such containers should be thoroughly cleaned before cutting.

MAKE SURE THEY'RE SAFE

A POWER press was being used for a new operation and was fitted with a wire mesh guard. Because the guard had not been properly tested before the machine was put into service, the woman operator lost the tips of two fingers. The feed opening between the bottom of the guard and the press table was so wide that it was possible for the operator to get her fingers through while the machine was making the downward stroke. While attempting to push the last strip of metal into the press, her fingers went through the gap as the punch came down.

Learning the hard way



LEARNING THE SAFE WAY

BECAUSE Bennie Mellesmoen was wearing his hard hat while doing routine work at the new Blanchard Dam, south of Little Falls, Minnesota, the heavy reinforcing rod that struck his head only cut his scalp—although the rod punctured through the protective hat.

Mellesmoen, senior lineman in the maintenance and construction department of the Minnesota Power & Light Company, was standing on a scaffold beneath a concrete pier when the rod fell. The ⅝-inch rod, about 42 inches long and weighing approximately seven pounds, would have killed him or caused serious injury but for the protective hat, company officials declared.

"Safety News," the company's employee newspaper, stated:

"Congratulating a man for saving his own life is like patting a small boy on the back for eating ice cream, but congratulations are due Bennie Mellesmoen for having the foresight to wear head protection on a routine job. He might have used any of the excuses we hear day after day, which would have been no protection at all. Bennie is entitled to wear a feather in his hat and we bet the hat will be a safety helmet."

Three stitches closed the cut on Mr. Mellesmoen's scalp and he was back on the job without lost time as a result of the accident, reported T. O. Perrault, director of safety for the company.

Picture by courtesy of Mine Safety Appliances Co.

Off-the-Job Safety

(Continued from page 52)

directly to the inability of some employee to concentrate on his work and on his own safety because of the fact that some member of his family is sick or suffering from an injury. Such an employee is inefficient and his ability to produce is restricted greatly. This automatically makes him a problem for the foreman and as a result complications may develop.

Adapt Industry's Program to the Community

There are many devices that are used in industry today that can be applied successfully to community safety activities. The industrial vision testing equipment is an excellent tool which will enable you to go into an employee's home as well as other homes in the community and render real service. This piece of equipment is accepted by education systems and can provide the answers to many problems in solving visual deficiency of individuals. Many ailments and disturbances can be either directly or indirectly the result of visual irregularity or imperfections.

Another good device is the blood typing program which we undertook a few years ago. Every employee in the company has had his blood typed and this information is on file in the Personnel Department. Any employee or member of an employee's family in need of blood need only call the Personnel Department, and individuals with the required type of blood will be requested to go to the hospital. The company makes no deductions for time off from the plant when any employee or group of employees is called upon to render emergency aid. Hospitals and doctors of the twin-cities use our program as a source of blood when needed.

It is our duty and responsibility as safety engineers to carry on activities in our plant and in our communities around the clock, throughout the year. To be completely effective in our work we cannot limit ourselves to the duties within the plant and disregard entirely our obligations to our respective communities. Good employee relations and effective safety programs are vital to each other. When employees know the feeling of security which can only be theirs when they realize their safety and welfare is a company interest and responsibility every hour of the day, their respect for company policies and practices is intensified and enriched.

Community safety activities by industrial plants' safety personnel are both good public and employee relations in action. As a result of our safety program, we have a very low turnover and a constant request for employment. This, I sincerely believe, is because of the whole-hearted and enthusiastic efforts of the company to assist whenever and wherever they can in any emergency which may strike the community.

From an address presented at a meeting of the American Association of Safety Engineers in Knoxville, Tenn.

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. . . the "STORM DOOR" for Gas Masks

Now Acme introduces an auxiliary valve to solve the problems of frozen valves in sub-zero weather, and curled valves due to rubber solvents. Serving much the same as a storm door serves the home, the Protect-A-Valve is designed for use with the Acme No. 6 face piece—making it safe for use in temperatures as low as 50 degrees below zero. Write for complete details on this approved Acme development to overcome hazards of rubber-solvent atmospheres and *to be ready for next winter's freezing problems.*

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SAFETY ACHIEVEMENTS

CONTINUING high standards of safety in the chemical industry were disclosed in a report of the Manufacturing Chemists' Association, Inc. For the first two months of 1952, the frequency rate of accidents among Association member companies was 3.86 per million man-hours of exposure. For all of 1951, with 654.8 million hours of exposure, accident frequency rate was 4.83.

Both figures reflect improvement over prior years, and according to records of the National Safety Council they are lower than comparable figures for any industry except aircraft manufacturing.

The Industrial Injury Reporting Service of MCA covers companies who manufacture more than 90 per cent of the tonnage of chemicals produced in the United States.

EMPLOYEES of Pittsburgh Plate Glass Company's Works 4 plant at Ford City, Pa., were recently cited by the Western Pennsylvania Safety Council for their outstanding safety record achieved during 1951.

In presenting the plaque to Ralph Reisgen, assistant superintendent of Works 4, Harry Brainerd, executive manager of the Safety Council congratulated those attending the dinner meeting in the Ford City Fifth Avenue Hotel, but also cautioned them "not to accept the (safety) job as being finished but rather look upon the winning of the award as a stepping stone to a still better record."

While accepting the National Safety Council plaque on behalf of Works 4, Mr. Reisgen, who also served as chairman of the Plant's Safety Committee, generously credited its winning efforts "to the well-planned program of our safety people, the Safety Committee which carried it through and to the cooper-

ation of every employee in safe working." The Ford City plant was adjudged the safest place in which to work of all plants in the Flat Glass Division of the Council's Glass and Ceramics Section.

Works 4 had only 1¼ accidents for every million man-hours its people worked. On that record and on the basis of a 40-hour work week and a 52-week work year, the average Works 4 employee could be on the job 400 years before suffering an injury severe enough to prevent him from working.

Superintendent D. F. Cannon, who was host to the group which included assistant superintendents, department heads and nurses, paid high tribute for this most recent accomplishment to the excellent team of workmen in all categories in the plant.

The First Aid Group made up of the plant's Safety Director Jacob Hobaugh and the nurses headed by Miss M. Katherine Morgenstern, also were highly commended for their efforts toward attaining this impressive safety record.

A NEW safety record for the construction industry has again been established at the Savannah River Plant, which is being built by the du Pont Company for the Atomic Energy Commission.

From March 12, 1952, through April 19, 1952, employees of du Pont worked 6,275,072 continuous man-hours without a disabling injury. From March 12 through April 12, all employees at the plant, including sub-contractors, worked 5,121,979 continuous man-hours without a disabling injury. The du Pont record ended with a finger injury; the overall record with a head injury.

Both figures far surpass the former world's safety record of 4,826,763 hours, also set at the Savannah River Plant last January 30. This string of hours ended at 11:55 a.m. on that date when an employee suffered a broken leg. The former record of 4,826,763 hours surpassed a previous record of 4,428,629 hours established in 1948 at a Belle, West Virginia, construction project of du Pont.

The new world's record brought praise from both Curtis A. Nelson, Manager, Savannah River Operations Office, AEC, and Robert K. Mason, Field Project Manager for Construction, du Pont, who credited the outstanding achievement to fine cooperation and compliance by all employees and an alert supervisory force.

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If your workers are troubled with dermatitis, investigate Powdered Germa-Medica with G-11. It's the amazing new antiseptic soap that helps eliminate skin diseases . . . economically, too! Ask for samples.

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Rubber & Plastic Clothing

(From page 19) the protection afforded by the major materials. In addition to the information given in the chart, it is generally found that plastic garments are lighter in weight and less irritating to the skin than either rubber or synthetic rubber. The costs of all three compare favorably, although supported fabrics usually are costlier than un-

supported. Natural rubber is slightly higher in price than either synthetic rubber or plastic.

The majority of rubber and plastic garments are sewn, but where the entire garment must be impervious to liquids and dusts, plastics can be electronically seamed and rubber garments vulcanized.

Future Trends

One of the most promising recent developments in the plastic field is the use of plastisols, which are defined as vinyl mixed in liquid plasticizer. Plastisols enable the coating of materials through a simpler operation than formerly necessary.

One of the great advantages of this type of coating is that the properties desired can be "built in" the plastisol, whether they be abrasion resistance, solvent resistance or low-temperature flexibility.

Gloves coated with vinyl plastisol are, in general, superior to rubber. They have better resistance to oil and grease; higher abrasion resistance; retain colors built into them; superior resistance to acids and caustics; superior resistance to soap, detergents, and hot water. In addition, they are lower in cost.

Plastics seem to offer the safety engineer the greatest prospect for solving many of his safety clothing problems. Every day brings new developments in materials which soon find their way into improved garments.

The trend is to thinner, lighter-weight garments of increased strength. We can visualize in the not-too-distant future, a plastic coverall weighing only a few ounces which can be folded into a packet which will fit easily into a shirt pocket.

Aprons and sleeves of unsupported plastic in use.

Types of Clothing

The versatility of rubber and plastic materials can be noted in the following brief list of items of protective clothing. The list is not intended to be complete, but only to illustrate some of the uses of these materials:

Hats—Although not strictly covered by this article, they serve to emphasize the fact that there is hardly an industry that does not in some way rely on rubber or plastic for the protection of its workers. The modern hard hat is high-pressure molded of plastic-impregnated fabric, and provides tremendous impact resistance. Caps of plastic film serve women workers both from the standpoint of cleanliness and of safeguarding against their hair becoming entangled in moving machinery. Rubber sou'westers find use in chemical plants.

Hoods—Are available in natural rubber, synthetic rubber, and both supported and unsupported plastic. Hoods may or may not have an air supply. They are primarily for protection against liquid splash and

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dusts. However, the hood covering most types of Sand Blaster's Helmets is generally of heavy rubber calendered on a cloth base to provide the required impact and abrasion resistance.

Faceshields and Goggles—Again, though strictly not in the province of this article, they serve to emphasize the growing role of plastics in personal protective equipment. Faceshields are generally available with visors of different materials to provide the most efficient protection against the two principal hazards of either liquid splash or small flying particles.

Capes—Certain occupations require rubber half-capes to protect only the upper body of workers.

Sleeves and Wristlets—They are normally manufactured from both supported and unsupported fabrics.

Finger Cots—Unsupported plastics are being increasingly used in occupations which require protection of only one or two fingers.

Gloves—The trend today is toward plastic coated gloves, which provide greater abrasion resistance, protection against high concentrations of acids and caustics, flexibility, comfort, and some degree of heat resistance. Plastic gloves have been available for a good many years, but it is within the past three years that they have gained greatest acceptance. Industry now recognizes that although plastic coated gloves cost slightly over double the price of regular canvas work gloves, they outwear the standard work glove at a ratio of 10 to 1 or better.

Belts—The standard web safety belt, when impregnated with synthetic rubber, has its service life considerably increased in chemical plants and related industries.

Aprons—Are made of practically all materials referred to in this article. The choice of material depends upon the application.

Jackets, Pants & Coveralls—These are also available in all materials. Unsupported plastics are presently finding use where there is some danger of radioactive contamination. These garments protect the inner clothing and may be easily decontaminated and sterilized. Many Civilian Defense units are being equipped with suits of this material.

In summary, it can be said that, since their introduction, rubber and plastic safety clothing have prevented many a tragic accident. They have contributed greatly to improved safety records; reduced minor injuries, and resulted in increased efficiency and greater productivity.

Pictures by courtesy of Mine Safety Appliances Co.

The EASY Way to get information on Advertised Products Use the Check List Page 76

THE FIRE FRONT

Fire Tests on Asbestos-Cement Faced Wood

FIRE resistance data on asbestos-cement shingles and wall facings become increasingly significant as the demand grows for low- or moderate-cost constructions. The National Bureau of Standards report entitled *"Fire Tests of Wood-Framed Walls and Partitions with Asbestos-Cement Facings"* by Nolan D. Mitchell, provides information derived from recent tests. Such information will aid building authorities and regulatory agencies in evaluating the fire-resistive characteristics of wood-stud walls and partitions having facings of asbestos-cement and will give the prospective builder a basis for the selection of constructions to meet given fire-resistance requirements.

Asbestos-cement shingles are often used as the exterior coverings of wood-frame houses and buildings. Recently, however, constructors have employed asbestos-cement sheets as the interior facings of walls and on both sides of partitions, To secure data on the fire resistance of both interior and exterior facings, asbestos-cement materials were subjected to the tests which are described and illustrated in the NBS report. Recommendations based on the results obtained should prove of value in building construction.

This National Bureau of Standards Building Materials and Structures Report 123 is available for 15 cents from Government Printing Office, Washington 25, D. C. Foreign remittances must be in U. S. exchange and should include an additional one-third the publication price to cover mailing costs.

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Way to Lower Fire Costs

BUSINESS men were assured that fire and accident insurance costs could be lowered through application of engineering principles by John J. Ahern, speaking before the Insurance Buyers conference in Rockford, Ill.

Ahern is professor and director of the department of fire protection and safety engineering at Illinois Institute of Technology.

"Modern science has made great strides in automatic methods of fire protection and extinguishment," he said. Unfortunately these improvements are not being utilized properly now when we cannot afford to lose either time or materials due to fire, he added.

Poor conditions in occupancy and construction, lack of sprinkler systems and adequate local fire departments, and probability of fire spreading from building to building are always reflected in insurance rates, Ahern said.

"Unsafe physical features are always the result of poor engineering and the sooner we face that fact the sooner we will be able to control accidents," he said. A careful survey of past accidents should be made to determine the unsafe physical features and practices, he added.

Bulldozers Help Prevent Fires in Piled Coal

HIGHLY mechanized handling of crushed coal has made fire prevention more effective and manpower more efficient for Georgia Power Co. Extensive use of advanced handling methods may be seen at the company's huge operation near Newman, Ga. Plant Yates, largest steam generating plant in the Southeast, can be sized up by a look at its 400,000 ton coal pile measuring 50 ft. high, 1,000 ft. long and 500 ft. wide.

Conveyors feed the crusher, the pile and the plant. Three tractors work the pile, spreading coal dumped by conveyor. A moderate amount of compaction by the bulldozer-equipped machines serves to check the effects of internal combustion. Whenever the crusher stops, the tractors clear out a low spot for dumping in more coal.

Plant Yates, which has been in operation about two years, has only had one fire during that time. The coal handling method yielding this

result is now in use at two other new Georgia Power Co. facilities in Georgia.

One previous method was to dump coal from a crusher onto a pile, then rehandle it with overhead buckets. This method left the coal piled so loosely that air currents got under the coal and fanned any fires that started from internal combustion. To combat fires, the power company had to maintain a crew of 20 to 25 men with hand shovels. The crew never got ahead of the fire, and much coal was being wasted.

Then, in 1938, Yancey Bros. Co. of Atlanta sold the idea of using a Diesel tractor-bulldozer to fight fire. The operator would spot a small fire, dig it out with the tip of his blade, then whirl around on top of the spot with a track and put the fire out. From this beginning grew the present system of coal handling.

Picture by courtesy of Caterpillar Tractor Co.

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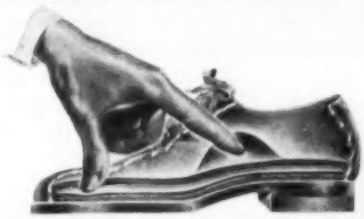

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Future Shows

Washington, D. C.

June 2–4. The President's Conference on Industrial Safety. (Department of Labor Building) William L. Connolly, Chairman of Coordinating Committee, Bureau of Labor Standards, U. S. Dept. of Labor, Washington 25, D. C.

Long Beach, Calif.

June 16–18. Western Safety Conference. Joseph M. Kaplan, Secretary-Manager, Greater Los Angeles Safety Council, Suite 730, 610 S. Main St., Los Angeles 14, Calif.

York Harbor, Me.

September 11–12. Twenty-fifth Annual Maine State Safety Conference (Marshall House). A. F. Minchin, secretary, Industrial Safety Div., Dept. of Labor & Industry.

Cleveland, Ohio

September 16–18. Fourteenth Annual Ohio State Safety Conference. (Hotel Carter). Carl L. Smith, Secretary-Treasurer, Ohio State Safety Council, 2073 E. 9th St., Cleveland 15, Ohio.

Chicago, Ill.

Oct. 20–24. Fortieth National Safety Congress & Exposition. R. L. Forney, General Secretary, National Safety Council, 425 N. Michigan Ave., Chicago 11, Ill.

Cincinnati, Ohio

November 12–13. Second Annual Greater Cincinnati Safety Conference & Exhibit. (Gibson Hotel) Kenneth R. Miller, Coordinator, c/o Greater Cincinnati Safety Council, 1203 Federal Reserve Bank Bldg., Cincinnati 2, Ohio.

industrial Hygiene

ASSOCIATE EDITOR
JACOB A. GOLDBERG, A.M., Ph.D.

A.E.C. Sets Up Industrial Hygiene Training Program

THE Atomic Energy Commission has inaugurated a one-year fellowship training program for industrial hygienists, starting in the Fall of 1952.

If qualified candidates can be obtained, up to four will be selected for one school year of academic training. Commenting upon this program, Dr. Shields Warren, Director of AEC's Division of Biology and Medicine, said: "At the present time the supply of chemists and engineers equipped with the special knowledge required for positions in industrial hygiene is extremely limited. There is need at present for industrial hygienists at several of AEC's installations and the expansion program will create requirement for others."

The stipend for the Industrial Hygiene Fellows would be: $1,500 per annum if single; an additional $500 if married and $250 additional for each of two dependent children. If the Fellow has completed one or more years of graduate work in a related field he will be allowed $200 additional.

All candidates would be required to have a security investigation before being appointed.

The program will be administered by the Atomic Energy Project, School of Medicine and Dentistry, University of Rochester, Rochester, N. Y.

Applicants must have a degree in engineering (preferably chemical), chemistry or physics. Application blanks may be obtained from Mr. Eisenbud, New York Operations Office, U. S. Atomic Energy Commission, P.O. Box 30, Ansonia Station, New York 23, N. Y.

Acetaldehyde Data Sheet

CHEMICAL Safety Data Sheet SD-43, "Acetaldehyde," has been issued by the Manufacturing Chemists' Association, Inc. This publication summarizes the physical and chemical properties of acetaldehyde, points out its hazards and recommends precautionary measures in all phases of its handling and use.

Acetaldehyde, a highly flammable chemical, is described as extremely reactive. It can readily be oxidized, reduced and polymerized, resulting in a number of compounds. Emphasis is placed upon the caution which must be exercised in shipping and storage of acetaldehyde, which is classified by the Interstate Commerce Commission as a "Flammable Liquid." ICC regulations must be followed in loading, handling and labeling.

Pure acetaldehyde, particularly in its vapor phase, is irritating to the eyes, nose, throat and respiratory tract. Repeated exposure to the vapor may result in chronic eye irritations. The Data Sheet points out that workers in contact with acetaldehyde should be familiar with its flammable and explosive characteristics, when mixed with air. Comprehensive information is included on personal protective equipment for various parts of the body, with special emphasis on eye protection.

The booklet contains detailed first aid instructions, as well as useful medical data supplied by the Medical Advisory Committee of the Manufacturing Chemists' Association, Inc.

Chemical Safety Data Sheet SD-43, "Acetaldehyde," may be purchased at 30 cents a copy from the Manufacturing Chemists' Association, Woodward Building, 15 & H Streets, Washington 5, D. C. Remittance should accompany order.

Exhaust Hoods

FOR information on exhaust hood design, "Exhaust Hoods," by J. M. Dalla Valle is a primary source of data, based on the author's own experimental investigations, on the flow of air around and into the openings in exhaust ventilating systems. Backed by over twenty years' experience in the field of industrial hygiene, it is a concise assembly of both (To page 64)

B R E C K

HAND CLEANER

Breck Hand Cleaner is an efficient, heavy-duty cleaner which is non-irritating and contains no abrasive materials. Breck Hand Cleaner cleans without lathering, and because of its mild yet thorough cleaning action aids in the prevention of skin irritation. About a teaspoonful of Breck Hand Cleaner is applied, without water, to the hands and arms and rubbed in well, followed by thorough rinsing. The excellent penetrating action of Breck Hand Cleaner loosens dirt, grime, and other soils and permits their easy removal in the rinse. Breck Hand Cleaner is formulated to rinse equally well in both hard and soft water. Breck Hand Cleaner has been found especially useful in helping to remove oil, grease, dirt, dust, grime, paint and other soils from the skin.

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HOW TO CONTROL HAZARDOUS SUBSTANCES

The control of hazardous substances requires a coordinated program of safety measures. Here are the general principles that should guide such a program and an illustration of the specific measures used in a lacquer manufacturing process.

By GEORGE A. SHERMAN, Industrial Hygiene Engineer
Division of Industrial Safety
California Department of Industrial Relations

ADEQUATE measures for the control of hazardous substances have become a reality in California since that state's "General Industry Safety Orders" were put into effect.

As described in the *California Safety News*, published by the Industrial Safety Division of the Department of Industrial Relations, the "Safety Orders" cover (among other things) dusts, fumes, mists, gases, and vapors; explosives and fireworks; hot, flammable, poisonous, corrosive, and irritant substances; special hazardous substances and processes; and the labeling of injurious materials.

In addition, the "Safety Orders" require the provision and use of whatever adequate safeguards and personal protective devices are necessary to protect the head, eyes, hands, feet and body of a worker exposed to hazardous conditions. Respiratory protection must also be provided where necessary.

Hazardous substances are many and varied. They include anything that may cause injury because it is corrosive, flammable, poisonous, oxidizing, irritating, radioactive, or otherwise harmful.

For detailed descriptions of ventilation and personal protective products, see "Best's Safety & Maintenance Directory" 1952 edition.

The extent of the effects of hazardous substances is revealed by a study of work injuries in California in 1950. Two pertinent facts from that study are that:

1. Hazardous substances were involved in one out of every nine industrial deaths.

2. They were involved in one out of every fifteen disabling industrial injuries. (This includes occupational diseases since, according to the California Labor Code, an industrial injury includes any injury or disease arising out of employment.)

Example of Control Measures

The *California Safety News* cited the measures instituted in one lacquer manufacturing plant as an example of how hazardous substances can be controlled. The lacquer manufacturing process was selected for illustration because hazardous substances are used in that process, and because the controls developed over the years by the lacquer manufacturing industry have changed it from a high-risk activity to a low-risk one.

The accompanying flow chart graphically shows these control measures, without which the process would be extremely hazardous, and likely to cause injuries from fire, explosion, corrosives and poisons.

Of course not all controls for hazardous substances are shown on this chart, which covers only one process. There are, however, general principles which should govern the control of dangerous materials in any process or any industry.

General Principles for Control

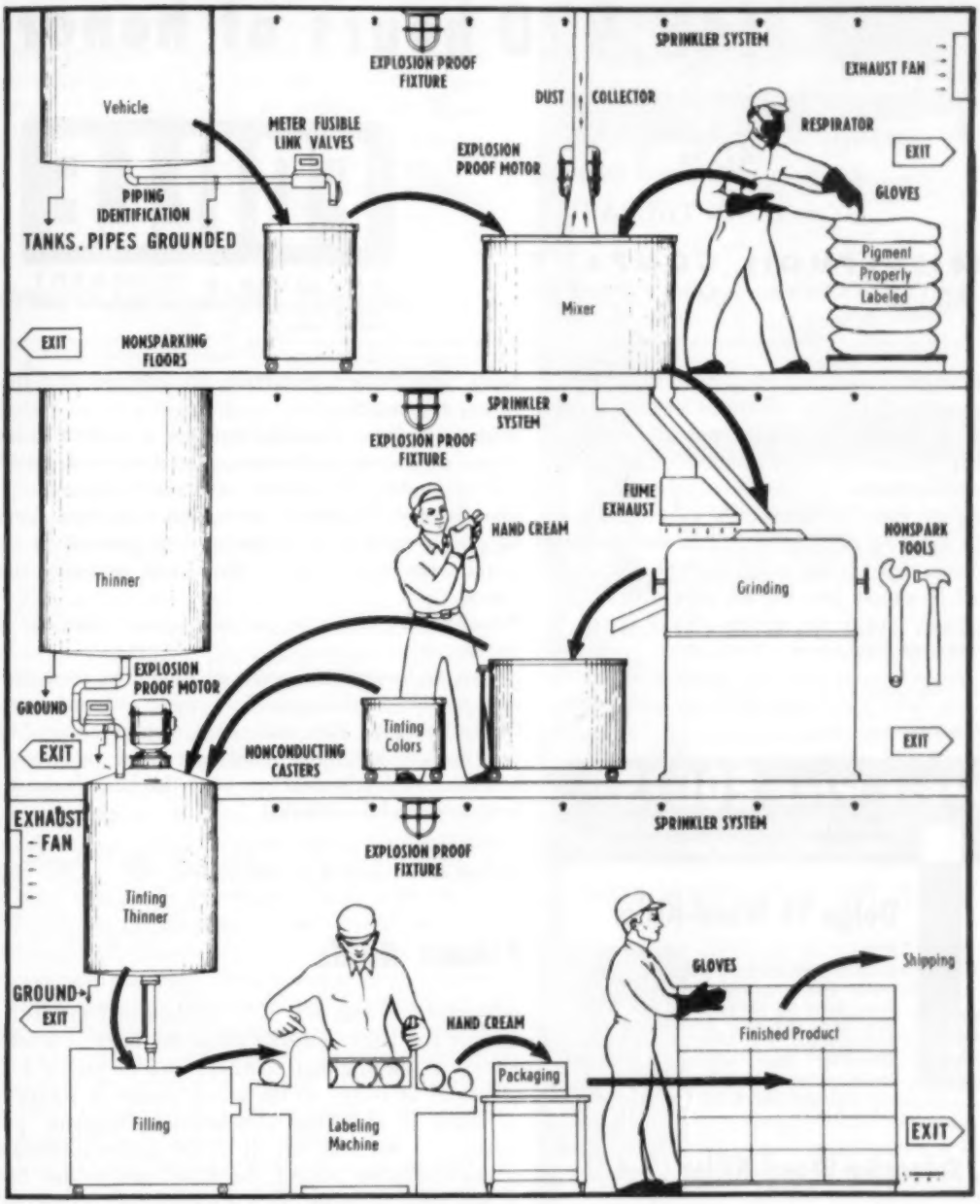
Some of the general principles for control of hazardous substances are given below.

Substitution. A hazardous substance should be replaced by a non-hazardous substance, if possible; failing that, by a less hazardous substance.

Enclosure and Control. Processes that give rise to hazardous substances should be completely enclosed and automatically controlled.

Isolation. Some processes should be isolated from all other operations by fire walls, barricades, booths or other ventilated enclosures. Workers in such isolated areas

HOW ONE LACQUER MANUFACTURING PLANT CONTROLS HAZARDOUS SUBSTANCES



usually need special personal protective devices.

Fire and Explosion Protection. If there are fire and explosion hazards in processes that cannot be isolated, particular care must be taken to see that all electrical equipment and other potential sources of ignition are of approved types and properly installed.

Local Exhaust Ventilation. Processes that give rise to the more hazardous dusts, fumes, mists, vapors, and gases, can be controlled by local exhaust ventilation—ventilation that collects the hazardous substances at the source and carries them to safe disposal.

General Ventilation. Processes that give rise to hazardous

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dusts, fumes, mists, vapors, and gases that are not harmful when properly diluted by additional air can be controlled by what is known as general ventilation.

Wet Methods. Hazardous dusty conditions can be controlled by wet methods.

Several recent cases of dermatosis were caused by contact with irritating dusts generated in the handling of asphalt-coated pipe. It was found that the dust could be controlled by simply spraying the pipe with a light mist of water.

Personal Protective Equipment. Respiratory protective equipment, protective creams, and personal protective equipment (for head, eye, hand, foot, and body protection) offer further protection for workers from hazardous substances.

Exposure Periods. The daily exposure of workers to hazardous substances can be reduced by short work periods, and by limiting the number of workers exposed.

Identification. Pipelines, valves, and containers should be plainly marked or otherwise distinguished, so that workers can easily identify them and recognize their hazards.

Adequate Exits must be provided where hazardous operations exist.

Automatic Control of operations should be used wherever possible, to eliminate the element of human error.

Proper Labeling. Raw materials and finished products that contain hazardous substances must be properly labeled. The labels must say what the hazards are and how they can be controlled.

The flow chart and assistance with material for the article were provided to the "California Safety News" by D. E. Lindsay and L. Megargee, Engineering Division of the W. P. Fuller Paint Co.

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dependable DOLGE
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Exhaust Hoods

(Continued from page 60) fundamental theory (including the latest thinking along the lines of what is known as the dilution concept) and of practical applications of theory to the actual design of hoods for all types of industrial installations. Originally published as a series of reports of the author's extensive research into the subject, the basic material has been considerably expanded, in this new second edition, and has been coordinated with data by other investigators covering all phases of hood, booth, and slot design.

Increased emphasis on industrial health hazards in plants where harmful and dangerous dusts, vapors, gases or fumes are generated has resulted in a demand for accurate design of exhaust systems, of which the hood is a most critical part. In "Exhaust Hoods," four chapters are devoted to the various aspects of theory, including flow of gases, velocity characteristics of canopy hoods, and criteria for determining hood effectiveness. Five chapters cover actual hood design for various types of applications. Other chapters cover booth-like structures, grille openings, woodworking

machinery, examples of hood design calculations, entrance losses, and the essentials of good construction. Sample problems, with the solutions worked out in detail, are given in a chapter devoted entirely to this matter. Mr. Dalla Valle is professor of Chemical Engineering, Georgia Institute of Technology.

The 141-page book, with 127 illustrations and 30 tables, is available from The Industrial Press, 148 Lafayette St., New York 13, N. Y.

Common Sense About Penicillin

"THE time has not yet arrived when members of the public may safely use antibiotics, often referred to as miracle drugs without medical supervision. The safest bet is still to have the family doctor advise the proper uses for penicillin or any of the other antibiotics."

This warning was given by Dr. Henry C. Marble of Boston, Medical Director for a leading insurance company at a conference of the company's medical staff. Pointing specifically to the increasing use of penicillin as a "cure-all" for colds and other common ailments, and also to the fact that penicillin is now generally available in drug stores in various forms without prescription, Dr. Marble said, "There is a tendency on the part of the public to misunderstand the use of this drug. While it is true that penicillin serves as an effective aid in controlling many diseases, it is not a cure-all, nor does the average person know which particular types of disease bacteria it is supposed to affect. Thus, the use of penicillin may or may not aid the suffering person unless the exact type of the infecting organism is known.

"Excessive use of penicillin or any other type of antibiotic," Dr. Marble says, "can also prove dangerous in more than one way. First, it may inhibit the growth of certain germs in the mouth and digestive tract and upset the body's bacterial balance in such a way that other ailments may be contracted. Specific examples of these ailments include a number of cases of thrush and black tongue, which were traceable to the excessive use of penicillin taken into the mouth.

"An additional danger is that indiscriminate usage in some cases will produce a sensitivity or allergy to the drug so that its later use might not be possible in the case of a more serious ailment. Penicillin is inactive against some types of cold germs and should not be taken for that purpose unless advised by a doctor.

"All of the antibiotic family, including streptomycin, chloromycin, aureomycin, and terramycin, as well as penicillin, are potentially powerful drugs capable of causing real harm if used indiscriminately," Dr. Marble warned. "On the other hand," he said, "they are one of the most effective tools ever placed in the hands of the medical profession for the control of diseases.

"In any case in order to secure safe and beneficial treatment antibiotics should only be used upon the advice of a competent physician who knows exactly what he is prescribing them for."

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There's an easy, economical way to end slipping accidents that steal man-hours and drag production down. Put positive non-slip protection in your plant with A.W. ALGRIP Abrasive Rolled Steel Floor Plate.

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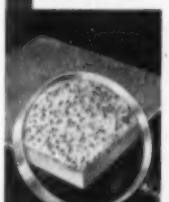

ALGRIP'S safety isn't merely a surface treatment. Note the even distribution *and* depth of the abrasive grain. As the surface wears, new particles are exposed, so ALGRIP keeps its non-slip qualities for a lifetime. It needs no maintenance. Rolled steel makes it stronger than other abrasive floorings. It withstands hard blows and heavy loads without cracking or breaking. And thinner sections can be used without reducing load carrying capacity.

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THE INDUSTRIAL Nurse

EDITOR

ROSAMOND J. WEBSTER, R.N., A.M., Ph.D.

Workmen's Compensation Legislation in 1951

NUMEROUS amendments of workmen's compensation laws were adopted in 1951. Of the 54 state, territorial and Federal workmen's compensation laws, 42 were amended in one or more respects. Four legislatures—Kentucky, Louisiana, Mississippi, and Virginia—did not convene in 1951.

Changes included liberalization of benefits, coverage of additional employments, measures designed to facilitate rehabilitation, increased coverage of occupational diseases, and the broadening and creation of second-injury fund provisions.

In 32 states benefits for death or some type of disability were increased in some respect. The maximum weekly benefit was raised, the number of weeks for such benefits was extended, the total maximum amount was increased, or the maximum percentage of average weekly wages to be used in computing benefits was raised. An increase of 20 percent more in the maximum weekly benefits was authorized in Colorado, Delaware, Florida, Kansas, Missouri, New Mexico, North Carolina, and North Dakota. In Florida the weekly rate was raised more than 50 percent from $22 to $35.

Taking into account these 1951 increases, more than half the laws currently provide $30 or more (including allowances for dependents) for maximum weekly benefits in temporary-total disability cases. Illinois became the state with the highest maximum percentage of weekly wages to be used in computing benefits, when its legislature raised the percentage in all disability cases from 65 to 97½ for a worker with 3 or more children. For a worker with 2 children, the percentage is 90; with 1 child, 82½; and with no children 75.

Other states which increased the maximum percentage of weekly wages were Indiana from 55 to 60 and Iowa from 60 to 66⅔. The maximum period for the payment of benefits in Connecticut was increased from 312 to 520 weeks in death cases and from 624 to 780 weeks in all disability cases. Florida doubled the maximum number of weeks for which permanent-total disability benefits may be paid, from 350 to 700 weeks. Iowa increased the number of weeks in such cases from 400 to 500.

Thus the costs of accidental fatalities and injuries reflect the general inflationary trend, indicating stronger measures to control the cost of accidents—a burden to the entire economy of the nation.

Some Fundamentals

A NATIONALLY known professor of public health has summarized some major aspects of public health in a recent issue of the Journal of the A.M.A. Under the title of "Public Health and Medical Care for the Community and the Individual," he makes the five major summaries: (1) The whole purpose of public health services is to put the knowledge of preventive medicine, of personal hygiene, and environmental sanitation to work by all capable of understanding and following the teachings of human biology. (2) Public education, information, and guidance are the foundation of personal and community understanding of self-protection and self-development. Public health cannot be given to a community or bought by people as a commodity. (3) Health is the end-product of inheritance, environment, and intelligent management of our individual lives. Health depends on character at least as much as on knowledge. (4) The department of public health of a modern American community is that instrument of society devoted to realizing the benefits of the sciences of preventive medicine for its own community. (5) The quality of public health services provided by the local government is the best index of the intelligence and imagination of the people of any community.

The emphasis on public health and the effectiveness of local and state health departments naturally have a direct bearing upon industry. It is a measure of a community's sense of public responsibility which is reflected in the effectiveness of the public health de-

partment. What is done in prevention, health education, hospitalization of cases of communicable diseases, laboratory and X-ray testing and related health department functions, will be reflectable in the local morbidity and mortality figures.

Industry has a direct interest in all these matters. Working hours are usually only 40 out of 168 in a week. What a worker does 128 hours when away from his workplace often has more influence on his accident rate, absenteeism, and health record than what occurs while employed.

The Fists Did It

ONE can hardly recommend the use of the fists or other physical punishment in order to lower the blood pressure of an aggressive individual. But, even such seemingly outlandish and unusual action sometimes seems to relieve severe emotional tension.

In a study of circulatory responses to live situations, a young male patient with comparatively high systolic and diastolic pressure reported many severe quarrels with his newly acquired in-laws, as well as difficulties with a domineering mother. A brother-in-law was particularly obnoxious and irritating to the patient. At one clinic session, the recently married young fellow took a statement by his clinic physician to warrant a fight with his hated in-law. He sought him out, administered a severe beating to him, and then phoned his physician. Upon examination shortly thereafter, his blood pressure had surprisingly dropped markedly, and reached normal readings for the first time in several months. The pattern of his reactions changed a great deal and his blood pressure readings were customarily within normal limits. Formerly he had been much affected by anger and frustration, with a concomitant rise in arterial pressure. Once he felt relieved of his inward tensions which were aggravated by in-law troubles, his systolic and diastolic pressure dropped and continued at a lower reading for some time.

Physicians have long recognized the influence of the emotional state on blood pressure and other measurable factors. This particular case is an interesting commentary upon the effect of tensions, frustrations, doubts of worthwhileness, status in family life, and many more factors inducing emotional disturbances.

The workers who are prone to such states, or give evidence of inward troubles, are good subjects for the competent, sympathetic and understanding industrial nurse.

Is it Heart Disease?

WITH large numbers of men being taken into the armed forces, a question that has come to the fore, as on previous occasions, is that of functional disorders of the heart. The so-called irritable heart of the

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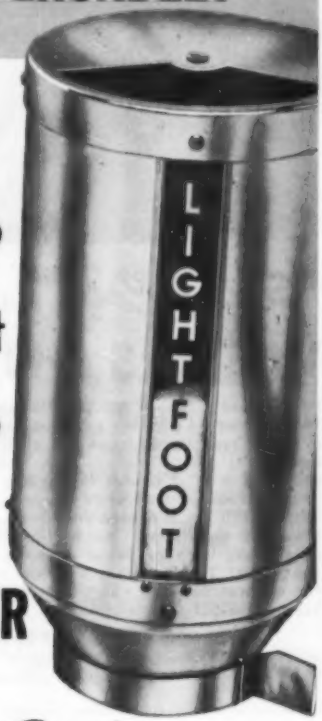

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In a recent survey made by a large auto plant in a group of 15 wet sanders working on a hood sanding job, more than half of these men showed considerable irritation of the skin on the wrists and forearms. This group had not as yet been provided with a protective cream. In a second, but much larger group of wet body sanders who were provided with SKIN-COTE No. 3 protective cream, only one case of dermatitis had developed. As far as the plant hygienist could determine, both of these group exposures were of a like character. This company has now adopted SKIN-COTE No. 3 for all wet sanding operations throughout their plant. . . . Send for eight-page catalog. . . .

The BOYER-CAMPBELL COMPANY

6532 St. Antoine *Safety Division* Detroit 2, Mich.

soldier—or, effort syndrome, neurocirculatory asthenia, is recognized as a special form of neurosis. The alternative names given to the manifestation are suggested in order to dispel the implication that it is primarily a disorder of the heart. While it has been met with chiefly among soldiers under the stress of war, it is nevertheless seen with some frequency among young people of both sexes in times of peace. However, it is not apt to be as severe in civilian life.

The causes are varied and numerous. A majority of those who complain of the condition bear the stigmata of constitutional inferiority, either nervous or physical. Among the exciting causes, much the most important seems to be severe and prolonged nervous strain, especially if associated, as in war, with fatigue and physical exhaustion. In many patients the symptoms have appeared during convalescence from an acute illness. Many of the symptoms resemble those caused by overactivity of the thyroid, but evidence indicates that the difficulty does not stem from disturbance of the thyroid function. Likewise, there is evidently no basis for the assumption that either tobacco or alcohol play any part in the production of symptoms.

Although prolonged emotional strain is the commonest exciting cause, the psychic disturbance is not that of the familiar type of anxiety neurosis. At the beginning, at least, there is no apprehension concerning the state of the heart. While a physical preemployment examination is of considerable help, many of these individuals will pass because of no intrinsic cardiac disease. Signs of their difficultes may appear while at work; as a result of family or other personal problems; troubles with a supervisor or fellow employee. Being aware of the specific facts can be of much help to the industrial nurse when faced with such a situation.

More About New Drugs

AT THE instance of the Public Health Service, President Truman sent a special communication to Congress early in April requesting an additional fund of $200,000 for the clinical investigation of isonicotinic acid derivatives in the treatment of tuberculosis. The proposed program calls for 18 weeks of study of 1,500 tuberculosis patients in 15 hospitals and sanatoria in Tennessee, Michigan, Ohio, Washington, Massachusetts, Minnesota, Pennsylvania, New York, Georgia, Florida, Connecticut, North Carolina, and the District of Columbia. A previous transfer of $250,000 from available Public Health Service funds has already been made for these studies.

Reports from many countries indicate the great interest that has been aroused through the preliminary announcements of the use of the new chemcials in the treatment of tuberculosis—an outstanding destroyer of life at virtually all ages. The *American Review of Tuberculosis* for April carried special articles on the subject. In brief, isonicotinic acid hydrazide has been demonstrated to have a considerable and unique inhibitory effect on the growth of mycobacteria *in vitro* and to excite an impressive degree of antituberculosis activity in experimentally infected mice, and was well tolerated by several species of experimental animals.

It appears, from studies already carried on, that patients ill with pulmonary tuberculosis can take this drug daily for periods of four to sixteen weeks without evidence of serious toxic reactions. After a review of available data on the action of isonicotinic acid hydrazide and its isopropyl derivative upon the tubercle bacillus *in vitro* and on the course of experimental tuberculosis in animals and clinical tuberculosis in man, it is concluded that their demonstrated action, although highly encouraging, appears in no way to alter the basic principles of the treatment of tuberculosis as presently understood. Much more research work will have to be done to ascertain the exact place of these drugs in the treatment of tuberculosis.

The Incidence of Illness

THE physician serving a large commercial organization with 1,300 female employees has made a careful study of the illness records of these employees. His findings in several ways verify previous findings in

parallel studies. A major indication of the problems met relates to the fact that, of the total employees in this organization, one-third of the women contributed two-thirds of all illnesses. This group had more respiratory infections, gastro-intestinal disorders, tumors, accidents, and emotional disturbances of mood, thought and behavior.

Further studies included an analysis of the records of 350 women with over twenty years of service for the same employer. The group was divided into two classes: (1) those with most total illness, and (2) those with least total illness. Interesting findings become available. Among those with the least total illness, minor illness was only about one-tenth to one-fifteenth as common as among the groups with most total illness. In studying the histories of those who had records of few illnesses or accidents, it seems that early childhood experience had a distinct relationship to such experiences with illness and accidents in adulthood.

These findings help to throw light on the cause of accident proneness which has been a subject of study for many years. However, unless accurate records are kept of both illnesses and accidents over a considerable period of time—that is, several years—wrong conclusions may be drawn in reference to specific individuals. In times of a tight labor market it is usually necessary to pass over many factors in employee selection, that would receive other attention at different times. Still, selectivity with care is essential, especially for certain key positions, for those which inherently present some hazards, or require particular aptitudes and skills. The records kept by the industrial nurse can—when properly studied and tabulated—be of considerable help to the medical department, personnel department, safety engineer, production chiefs, and top management. The efforts expended are worth the time involved.

PLACE HEAD-BAND WELL UP AROUND HEAD TO KEEP FROM SLIP-PING DOWN
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Older Age Groups

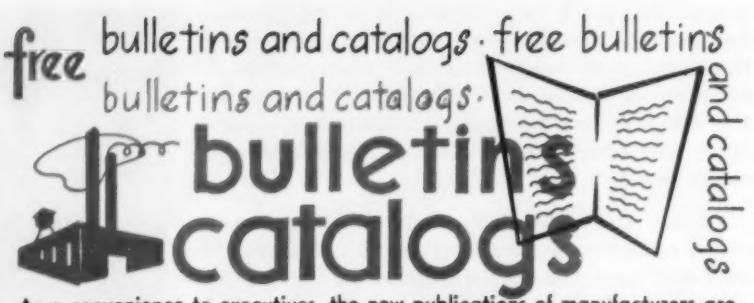
IT HAS frequently been pointed out that the population of this country is getting to be proportionately older, and that more and more attention needs to be given to this phenomenon. Naturally, industry has already been affected and will be more so in the next few decades. This is one aspect of our changing population picture. Another has been emphasized by the research work of a leading insurance statistician and his associates.

This relates to the fact that while extraordinary gains have been made in the control of infectious diseases as diarrhea, enteritis, diphtheria, scarlet fever, tuberculosis, typhoid fever, pneumonia and appendicitis, much still remains to be done. Oddly enough, these infectious diseases have previously taken a great toll among children and young people. Improvement in mortality toward the end of middle-life has been relatively small and in old age there has been virtually no improvement.

Experience Abroad

That this should not and need not be so is evidenced by comparison with the experience in a number of Western European countries, such as England, Wales, France and Italy. While public health and medical facilities are much superior in the United States, yet these countries and others have achieved a better record than our country insofar as health and longevity of the older age groups are concerned. Apparently the degenerative diseases among males and accidents among both sexes loom large in our short-comings. These are problems with which health and safety agencies in the United States are confronted.

Research on a large scale has already been launched in the broad field of the chronic diseases of middle-life and old age. This together with the increasing improvement in therapeutic measures in the treatment of degenerative and other diseases should before long be reflected in lower death rates in the older age groups. There is a tendency among some to look smugly upon our fine health records—not knowing that some countries have already done even better. This attitude must change. Likewise, satisfaction with safety records in plants and elsewhere is unwarranted. Much more needs to be accomplished.



As a convenience to executives, the new publications of manufacturers are offered by the Reader Service Department of SAFETY MAINTENANCE & PRODUCTION. The catalogs, data sheets and technical bulletins reviewed here present the latest information on protective and maintenance products and equipment. Use the Reader's Inquiry Coupon.

ATMOSPHERE CONTROL

Air Mover 1
Mine Safety Appliances Co. An improved device for moving large volumes of air quickly in situations requiring intermittent or emergency ventilation is described in a new 4-page bulletin. The illustrated folder explains how the portable device works on compressed air or steam for use in factories, mines, oil refineries, utility companies, ships, planes, etc.

Spray Booth Filters 2
Research Products Corp. "Stop Paint Overspray" is the title of a 12-page bulletin which describes clearly the use of Paint Arrestors to remove paint overspray solids from the air exhaust system of spray booths. Well illustrated, the bulletin emphasizes the health protection and fire prevention advantages of these easily installed filters. A variety of specific applications are shown.

Dust Collection in Roof Materials Industry 3
American Wheelabrator & Equipment Corp. An industry report on the use of cloth-type dust collectors in the manufacture of roofing materials, especially in mica processing and scrap recovery, is presented in this 4-page bulletin. Photographs illustrate the case histories, and flow diagrams show the sequence of operations.

PERSONAL PROTECTION

Safety Gloves & Clothing 4
Olympic Glove Co. A uniquely comprehensive catalog of all types of industrial gloves and also other protective clothing such as aprons, sleeves, jackets, leggings, etc. Glove and clothing materials include asbestos, duck, fabric, leather, neoprene, nylon, plastic, rubber, metal-reinforced, etc. Special types are offered for acid workers, welders, linemen, and burners.

Industrial Boots 5
Beacon Falls Rubber Footwear. This 4-page SM&P reprint emphasizes three safety features of the "Top Notch" line of rubber boots, pacs and shoes: the steel safety toe, the new rubber material that resists abrasion, and the special arch and heel design for comfort and traction. The bulletin lists other safety and comfort advantages and includes pictures and data on many styles of footwear.

Neoprene-Coated Work Gloves 6
Granet Corp. The careful workmanship that goes into the making of these neoprene-coated industrial gloves to assure safety is described in a 4-page bulletin. Several styles are illustrated and a performance chart shows the resistance of the gloves to specific chemicals, including organic and inorganic acids, alkalis, salts, oils and solvents.

Light-Weight Face Shield 7
U. S. Safety Service Co. Three models of a new light-weight face shield are described in this 2-page bulletin. This versatile face protector consists of a head frame to which clear or green visors of various lengths and thicknesses can be attached by snap fasteners. Two sizes of plastic spark protectors may also be added.

Plastic Optical Lenses 8
McLeod Optical Co., Inc. Optically correct shatter-proof, splinter-proof and light-weight plastic lenses are described in a small 4-page folder which outlines the safety advantages of these lenses for industrial workers, as well as for children and sports purposes.

Orlon Work Clothes 9
Worklon, Inc. An informative and well illustrated 20-page catalog tells how that garments made entirely of du Pont Orlon acrylic fiber are acid and chemical resistant, easy to launder and long wearing. The catalog gives specific information on technical aspects of the material and shows typical clothing styles. Tables give results of exposure tests to solvents, acids, alkalis and salts. Special plastic-coated and water-repellent types of fabric for added safety are also described.

Visor Goggles 10
Jones & Co. An illustrated bulletin describes the unusual features of the one-piece plastic goggle with an opaque visor attached to reduce overhead glare. Four models of the eye protector are shown, suitable for wearer comfort and safety in various types of industrial working conditions.

Highlighting Hand Protection 11
American Optical Co. This article reprint from SM&P shows you how to select the right type of hand protection for various industrial hazards. The illustrated 4-page folder also lists AO protective clothing made from asbestos, leather, flame resistant fabric, and steel-stapled leather.

FLOOR MATERIALS

Rolled-Steel Safety Plate 12
Inland Steel Co. An unusually informative 12-page brochure shows you where to use non-slip flooring plates and why they aid maintenance and production. Excellent photographs show actual installations for flooring, ramps, platforms, steps and on vehicles. Emphasizing the safety plus features, the brochure also shows how to apply the plates and gives full specifications for various types.

Non-Slip Thresholds 13
Wooster Products, Inc. Anyone concerned with design, application or purchasing of mefal thresholds, treads and stair nosings will find complete details in this 28-page booklet. Illustrated are various types of abrasive cast, extruded and rolled steel thresholds with cross-section and typical installation drawings. Various tread surfaces are shown and availability in different metals is indicated.

Grease-Proof Asphalt Tile 14
The Flintkote Co. This 4-page bulletin describes and illustrates in full color a grease-proof asphalt tile suitable for industrial flooring. While stressing the material's resistance to grease and oil, the bulletin also outlines its resistance to moisture, dirt and fire, ease of installation and maintenance and its non-slip surface. Color samples and specifications are given. Pictures show its use in factories, kitchens, labs and garages.

PLANT MAINTENANCE

Plastic Floor Finish 15
Shrelyte Co. A U.L.-listed emulsified plastic finish for linoleum, rubber, cork, asphalt tile, terrazzo, magnesite, etc. floors is described in this folder, which points out that "Anti-Skid" contains no wax, can be applied with a mop, requires no buffing, and provides a transparent non-slippery surface.

Floor Resurfacer 16
The Monroe Co. An illustrated bulletin describes the manufacture and uses of Swift-Floor, a ready-mixed resurfacing material. Pictures show the step-by-step methods for applying the product for immediate use by heavy-duty traffic.

Special Maintenance Coatings 17
United Laboratories, Inc. A new 4-page bulletin describes a dozen special coatings for the solution of such plant maintenance problems as skidproofing, rust prevention, painting over damp areas, weatherproofing and decoration of exterior masonry, interior waterproofing, painting over hot surfaces, acid protection, etc.

TOOLS

Safety Hammer 18
Custanite Corp. The unique features of the Flex-Flo safety hammer are described and illustrated in this 2-page bulletin. Diagrams and data show how the special design of this copper-base alloy hammer prevents mushrooming, chipping, flaking, and sparking. A price list for various sizes is included.

Wood Boring Bit 19
PTI, Inc. Many readers will recall the amazing circular saw blade introduced several months ago. The same company is now bringing out a revolutionary wood boring bit, described in an illustrated bulletin. The new bit eliminates torque and swing, is self-seating and permits drilling at any angle. The new design simplifies sharpening.

FIRST AID & SKIN PROTECTION

Liquid Soaps 20
U. S. Sanitary Specialties Corp. This illustrated brochure takes you behind the scenes in soap manufacturing. It shows the step-by-step flow of soap in its fabrication and highlights the unusual equipment devised to maintain quality control.

Burn Ointment 21
Pac-Kit Co. This pocket folder not only describes the ingredients of the P-K ointment but also gives first aid directions for treating minor and serious burns; burns from chemicals, acids, alkalis, and creosote; and burns in the eyes.

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What's New . . .

A coupon is provided at the end of this section for your convenience in obtaining illustrated descriptive literature of products listed here. *Send the coupon or written request to:*
Service Dept., SAFETY MAINTENANCE & PRODUCTION

STAIN-RESISTANT PAINT

A NEW paint formulated to cut maintenance painting cost contains a patented dirt repellent ingredient that will resist heavy stains, like machine grease, lipstick, mercurochrome, and ink. It has been introduced into the commercial and industrial markets by Enterprise Paint Mfg. Co. Called "Staize-Clene," it also will resist the accumulation of dust, dirt and other airborne deposits from 79% to 90% longer than other products, it is said.

Available in ten colors, the use of Staize-Clene for maintenance painting means longer life, better washing and less re-painting. The paint is made in a full line of finishes and undercoaters, flat enamel, semi-gloss enamel, high gloss enamel, enamel undercoater, and pigmented primer sealer. This is an entirely new approach to the maintenance painting field and is designed especially to lower maintenance painting costs. For details, send in the coupon.

WEIGHT-SAVING INSULATION

AN IMPROVED weight-saving insulating material, known as Ultralite, has been installed on most of the cars of the Pennsylvania Railroad's new streamliner trains, the Congressional and the Senator, which went into service in March. Made of long textile-type glass fibers bonded together with a thermosetting plastic resin, it is resilient, dimensionally stable and virtually indestructible. The insulation is produced by the Gustin-Bacon Manufacturing Company, of Missouri, which states that it will reduce the pull on 15-car trains by approximately 10 to 13 tons.

Railroad engineers say this new insulation material provides the cars with an added safety factor, since it lessens the weight of the car's superstructure, thus reducing the possibility of top-heaviness.

The material is being used for thermal and acoustical purposes in other branches of transportation too, such as trucks, buses and subway cars; for insulation of heating; ventilating and air conditioning equipment; for use in metal buildings; in general piping applications. For additional information send in the coupon.

NEW WATER PICK-UP MACHINE

A NEW Water Pick-Up Machine, designed to efficiently pick up or wet-vacuum large areas of water covered floors, is announced by the American Floor Surfacing Machine Co. Its use in combination with an electric scrubbing machine makes easy work of maintaining the largest floors in a clean and sanitary manner.

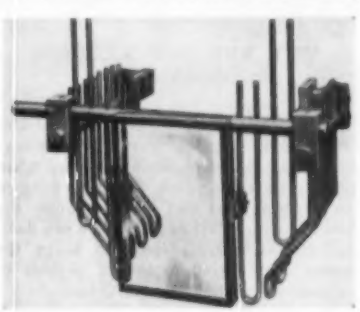
The machine has a powerful 1 H.P. motor, large capacity tank and wide, heavy-duty squeegee mounted as an integral unit on a sturdy three wheeled dolly. All that is necessary is to guide the machine at a steady, normal forward pace. Suds and dirty water are quickly picked up by heavy duty vacuum, leaving a clean, dry path 29 inches wide. Ideal for offices, schools, convention halls, stations, public buildings, factories, open air rinks and dance halls, stores and anywhere that large floor areas of any kind must be cleaned or dried.

Features include: cast aluminum pick-up unit with rubber squeegee blades, scientifically designed to get all the water with one forward stroke; tank of 15 gallon capacity has rust-proof porcelain interior; positive copper float cuts off vacuum at safe water level; squeegee lift control on handle raises Water Pick-Up from floor when not in use; trailing wire arm keeps electric wire out of way. For further details, send in the coupon.

PUNCH PRESS SAFETY GUARD

IMPROVED visibility of work for faster, more accurate production is an outstanding feature of the new Series 25-S Adjustable Die Enclosure Guards just announced by W. I. Martin and Company. A transparent center window of heavy-duty laminated safety glass offers crystal-clear vision of the entire die area plus complete protection for the operator from eye injuries due to flying particles. The use of safety glass makes cleaning easy and simple and avoids the scratching experienced with some plastics.

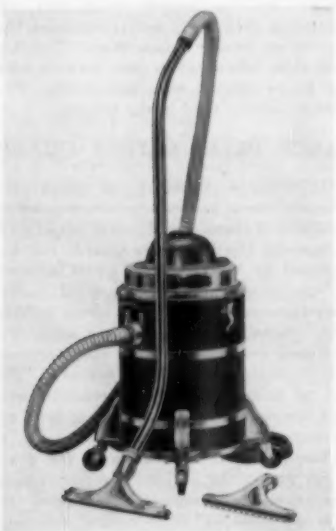
The principal application of the guard is for preventing accidents to punch press operators by completely enclosing the dies on blanking, strip-feeding, punching,



notching and similar types of first-operation press work. An unusual degree of flexibility for easy and rapid adjustment is provided by the individually adjustable steel rods which can be raised or tilted to fit the exact contour of different dies or types of work, the entire guard being removable as a unit for changing dies. The model illustrated has Type L Offset Side Gates for getting closer to dies on strip-feeding operations, other standard variations in construction being provided to fit diversified requirements, with a wide range of standard sizes available to fit any size of press. Full particulars may be obtained by sending in the coupon.

GREASE-RESISTANT APRONS

ASSOCIATED BAG & APRON CO., Chicago, announces it has developed a new grease resistant finish for its current line of plastic aprons. Aware that some plastics have not been highly resistant to grease, the new Basco plastic aprons have been greatly improved for use by food processing employees as well as dishwashers, cooks, chefs, etc. Tests have shown grease does not discolor or deteriorate the treated plastic, and that it will stay soft and pliable in cold or moist temperatures. Available immediately in four popular sizes in bib style. Information on this grease resistant plastic apron is available from Basco jobbers and distributors, or by sending in the coupon.



WET AND DRY VACUUM CLEANER

THE new Finnell Model 10B Wet-Dry Vacuum Cleaner features a by-pass motor to prevent mechanical injury when p.cking up suds or dust. Since the vacuum air stream does not pass through the motor, neither dust nor moisture can damage it. A separate fan also keeps the motor cool during prolonged periods of operation.

The machine operates quietly on a 1 HP motor. Weighing only 52 pounds and mounted on ball bearing swivel castors, it is easily moved. A twelve-gallon wet capacity and 1-1/3 bushels dry assures long operation before emptying is required. A large number of accessory tools permit the 10B to reach many "hard-to-get-at" places such as overhead pipes, grilles, venetian blinds, air filters, etc.

Although light in weight for portability, it is sturdily constructed for heavy-duty work. Vinylite finish inside resists corrosion. The outside is baked enamel. Hose connections are non-rusting swivel type with positive lock. For details, send in the coupon.

EMERGENCY STRETCHERS

A COMPLETE line of emergency stretchers is offered by the Washington Mortuary Supply Co. Well suited to industrial, civil defense or vehicle use, the stretchers can be folded up compactly for storage or transportation. In the open position, legs or wheels snap down into place so the patient is kept off the ground.

The units consist of metal frames over which is stretched canvas. Various models are available with or without legs and wheels. A light-weight type is made of aluminum. These stretchers are used not only for general purpose emergency and rescue work, but are also designed with ambulance requirements in mind. For further details, send in the coupon.

CLOTHING FOR WELDERS

WELDERS' protective clothing, designed exclusively for industry's feminine workers, is announced by American Optical Company. Styled to allow free and easy movement of the body, yet fitting so snugly that there are no gaps or openings to permit entrance of flying sparks, the clothing is light in weight while still providing the proper protection.

The tailored overalls look like women's slacks. A side placket insures a trim, comfortable waist line. The flared trouser legs provide additional protection for the feet and make the garment easy to put on and take off over safety shoes.

The yoked backs of the tailored coat and short jacket give greater freedom of arm movement. Tucks running down from the shoulders in front provide ample fullness and flexibility at the chest. The sleeves are shaped to fit and the seams are welted and located away from the direct line of fire. The new protective clothing is made of specially selected chrome tanned leather, simulating a soft, suede-like appearance. For further details, send in the coupon.

SAFE INSECT SPRAY

CALLED the Sinclair P. D. Insect Spray, a new spray has been developed by the Sinclair Refining Co. for use in and around food processing plants, creameries, and restaurants as well as in factories, institutions and public buildings. The product contains no DDT, but is said to be far beyond the minimum requirements of U. S. Bureau of Standards' Grade AA, at which it is rated.

Its 100% active ingredients contain pyrethins and piperonyl butoxide in water-white, odorless base oil, free from the odor or taste of kerosene, and will not stain. It can be used in electric or hand sprayers and is highly efficient in destroying flies, mosquitoes, roaches, moths, ants, water bugs, silverfish, carpet beetles and bed bugs. For details, send in the coupon.

LIQUID SKIN PROTECTION

A RADICALLY new idea in skin protection for industry is announced by Vanfaire Products, of California. The lotion is a pleasant, greaseless, non-sticky liquid which dries quickly and leaves an invisible protective film which is resistant to all solvents except water. It contains a potent non-toxic germicide to guard against infection from minor cuts and scratches together with an effective antihistaminic to relieve and prevent allergic or "sensitization" skin rashes. It comes in gallons for use in Vanfaire dispensers installed in washrooms or other plant areas, also small bottles for individual workers. Send in the coupon.

STATIC DETECTOR

A REMARKABLE new electronic instrument that automatically signals both an audible and visual warning of dangerous static in hazardous plant operations is now available.

Originally developed and widely used to warn of static hazards in hospital operating rooms, the new industrial STATICATOR is valuable in detecting and automatically warning of static conditions that, uncontrolled, might result in a destructive fire or explosion in hazardous plant operations. The equipment is in daily use in explosives plants, rubber and plastic coating operations, refineries, and other industrial operations where automatic static warning is desirable.

The instrument also is manufactured as a portable unit with a super sensitive probe that locates the static hazard, determines the intensity (voltage) of the static, the polarity of the charge and is not affected by stray electrical currents in the area under test. For details, send in the coupon.

SQUEEZE-GRIP WATER EXTINGUISHER

A NON-INVERTING, pressurized, water-type extinguisher that offers immediate fire-fighting efficiency is being introduced by The General Pacific and General Detroit Corporations. Designed for all types of buildings, this General Quick Aid Water-Type Fire Guard is especially recommended for use out-of-doors—with an anti-freeze charge when subject to freezing temperatures. Inexperienced operators can operate this extinguisher deftly and expertly because of its squeeze-grip or lever-action control and the panic-proof rip puncture pin which assures discharge, regardless of the position of the handle.

Shell of the extinguisher is made of seamless drawn brass. There are no welded or riveted seams, making the fireguard exceptionally strong and attractive in appearance. All component parts of the head assembly are also made of brass. It has a special recharging feature: All parts are removable as a single unit since the operation lever, carrying handle, discharge tube and carbon-dioxide cartridge are all attached to the head assembly.

The charge consists of plain water and a pressurized carbon-dioxide cartridge. Replacement cartridges come completely charged, ready for instant use. For details on this Underwriters' approved extinguisher, send in the coupon.

NEW SAFETY TONGS

A NEW huskier, more durable pair of safety tongs has been developed by Atlas Welding Accessories Co., for metal working and other industries.

The new tool is constructed of drop forged steel with long, broad nose members to provide a firm grip. Nose members are also thin at the tip, making them ideal for use in removing blanks from presses, selecting and removing single sheets from a pile, handling hot parts, lifting parts from solutions, etc.

By heating, the nose may be spread or reshaped as desired for handling special shapes. The tool is also available with a guard over the spring for index finger guiding. For details, send in the coupon.

FLOOR PATCHING MATERIAL

A BRAND new floor patching material called PERMAMIX, has been introduced by the Permamix Corp., of Illinois. Tested and proven over a three year period under actual plant conditions, this new floor patching material can be used on any present type flooring and is ready for instant use, indoors or out, just as it comes from the container. There is nothing to add, nothing to mix, it will not freeze, it can be stored indefinitely and used in any temperature. It sets instantly, traffic can be resumed immediately, there are no costly shut downs or delays waiting for it to set. It comes in handy, durable 50 lb. net weight drums.

Ease of application is one of its main advantages. There are just 3 simple steps to follow: first clean hole to be patched and spread primer supplied in drum, second, fill in with PERMAMIX, and third, tamp solidly and dust with cement or floor dust. Resume traffic at once.

Further information may be obtained by sending in the coupon.

THREE-IN-ONE FACE SHIELD

A FACE SHIELD with sufficient clearance to be worn over glasses with ultra-modernistic frames and industrial goggles has been designed and manufactured by The Boyer-Campbell Company, Safety Division, and will be identified as Model No. 301. The shield is glove-buttoned to a form fitting head gear which is readily adjusted to any shape or head size, eliminating all high spot contact and providing complete comfort for the wearer. This greater clearance for modernistic glasses and industrial goggles also affords better ventilation. With three types of shields interchangeable on one head gear—1. Plastice Shield for general utility (shown upper left); 2. Fibre Front with Glass Holder for gas welding (lower right); and 3. Screen Window for scaling, heat, cyaniding, etc. (lower left), the units provide standardization and great versatility. For details, send in the coupon.

June, 1952

To Safety Maintenance & Production

75 Fulton St., New York 38, N. Y.

For prices and complete details of items mentioned in this month's "What's New in Safety Products," check items that interest you and mail coupon.

- ☐ Stain-Resistant Paint
- ☐ Weight-Saving Insulation
- ☐ New Water Pick-Up Machine
- ☐ Punch Press Safety Guard
- ☐ Grease-Resistant Aprons
- ☐ Wet and Dry Vacuum Cleaner
- ☐ Emergency Stretchers
- ☐ Clothing for Welders
- ☐ Safe Insect Spray
- ☐ Liquid Skin Protection
- ☐ Static Detector
- ☐ Squeeze-Grip Water Extinguisher
- ☐ New Safety Tongs
- ☐ Floor Patching Material
- ☐ Three-In-One Face Shield

Firm Name .....

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INSIDE THE TRADE

Griffin Retires From Pittsburgh Plate Glass

RETIREMENT of Emmet D. Griffin as vice president in charge of Pittsburgh Plate Glass Company's paint division has been announced by Harry B. Higgins, president. One of the nation's leading paint manufacturing executives, Mr. Griffin will retire from active company work but will continue to serve as a member of the Board of Directors for at least a year and will also function as a general consultant.

Associated with Pittsburgh Plate Glass Company since 1903, Mr. Griffin joined the firm at the Cleveland, Ohio warehouse. He assisted in opening the Dallas warehouse and later served as manager of Pittsburgh's warehouses at Houston, Kansas City and Philadelphia. He was elected a vice president in 1935 and was largely responsible for the firm's success and growth in the highly competitive paint industry. Pittsburgh Plate today is one of the largest producers in the paint industry.

E. D. Peck, general paint manager for the merchandising division of the firm during the past twelve years, has been elected as vice president to succeed Mr. Griffin. Mr. Peck has been associated with the paint industry since 1907 and with Pittsburgh Plate since 1939.

In addition to the firm's fifteen domestic paint and plastic producing plants, the Brush Division will in the future as it has during the past eighteen months, operate under the direction of Mr. Peck.

Joseph C. Thompson, Jr. has been appointed as general paint manager to succeed Mr. Peck.

Associated with Pittsburgh Plate Glass Company since 1940, Mr. Thompson joined the firm as supervisor of trade sales development at the Milwaukee plant. Since 1946, he has served as assistant general paint manager of the merchandising division.

Hild Co. Celebrates 25th Anniversary

THE Hild Floor Machine Company of Chicago, Illinois, recently held a 25th Anniversary Party as a celebration of its many years of service in supplying floor maintenance machines and equipment for industry.

The accompanying photograph shows some of the 200 guests who were present for the occasion, including suppliers, friends, dealers, and publishers. Fred C. Hild, president of the company, and Mrs. Hild are in the center of the picture.

John Hewson Co. Opens Philadelphia Office

THE John Hewson Co. of New York City has announced the opening of its Philadelphia offices in the National Bank Building, Ambler, Pa., P.O. Box 163. Mr. Frederic T. Hults has been appointed as district manager for the tri-state area comprising eastern Pennsylvania, Delaware, and southern New Jersey. He will be in charge of all field application work, service and sales for the company's high speed static controls, high voltage D.C. insulation test instruments, staticator and other electrical instruments.

Clarke Sanding Machine Co. Acquires Porter-Cable Line

REPORTING on a move which places his company in the position of having one of the country's most complete line of floor sanding and maintenance machines, Ernest Cooper, president of Clarke Sanding Machine Co., Muskegon, Michigan, has announced the purchase of the Porter-Cable Machine Company's contractor and rental floor sanding and edging machine lines.

The purchase from the Syracuse company includes all Porter-Cable's inventory of finished machines and parts, together with the right to continue the manufacture of their floor sanding machines. Material purchased for the manufacture of these units is being moved to extend the production facilities in Clarke's Muskegon plant.

Mr. Cooper stated that his company has already started shipment of the Porter-Cable models, and that all future servicing of Porter-Cable floor sanders will be handled by his organization.

Atlanta Office of Marsh & McLennan

MR. L. S. KENNEDY, President, Marsh & McLennan, Inc., National Insurance Brokers, has announced the opening of an Atlanta office under the supervision of Vice President Frank M. Ridley, formerly with the insurance firm of Adams, Holmes and Tharpe, Inc. He is assisted by B. C. Branch, transferred to Atlanta from the New York office.

Goodyear Flooring Assignments

ASSIGNMENT of flooring sales representatives in Philadelphia and Boston have been announced by the Films and Flooring Division of The Goodyear Tire & Rubber Company.

John G. Andrews has assumed duties in Philadelphia and James Y. Jamison in Boston, both reporting to William J. O'Keefe, Eastern district manager of Films and Flooring Sales with headquarters in New York.

New Du Pont Laboratory

PLANS for construction of a new $2,000,000 Haskell Laboratory of Industrial Toxicology near Newark, Del., have been announced by the Du Pont Company.

This will provide enlarged facilities for the company's industrial toxicology laboratory which has been located at the Du Pont Experimental Station in Wilmington, Del., since 1935. The Haskell Laboratory rigidly tests Du Pont products and manufacturing processes to eliminate every potential hazard to employees and customers.

The new facilities have become necessary as this work has steadily expanded with the increase in the company's operations. The new laboratory will also enable the company to broaden its basic research on two major scientific questions: the causes of industrial fatigue and the factors that make clothing comfortable.

THE "SPECTACLE" TO SEE BEFORE YOU BUY!
No. 241003 —ALL CLEAR
No. 242003 —ALL CLEAR WITH SIDESHIELDS
No. 241503 —ALL CLEAR WITH GREEN ANTI-GLARE TOP
No. 241123 —ALL GREEN ANTI-GLARE
No. 242123 —ALL GREEN WITH SIDESHIELDS
the SAF-I-SPEC
Offers MAXIMUM "spectacle-type" IMPACT PROTECTION
• Modern attractive design—Striking appearance.
• Comfortable—lightweight—Velvet soft nose piece.
• Rugged—tough—Meets Federal spec. for impact.
• Lens made of Optilite ® Optically correct.
• Low original cost—Low cost replaceable lens.
• Employee acceptance—Feather-lite comfort.
• Lens can be quickly and easily changed.
• Lens also interchangeable with SAF-I-DUO, safety goggle.
• Also manufacturers of the SAF-I-SHIELD • and SAF-I-DUO Safety Goggles
Write for literature and prices.
UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto

Western Distributors of Glass Fibre Insulation

GUSTIN-BACON MANUFACTURING CO., of Kansas City, Mo., producer of Ultralite glass fiber insulation, has extended the distributing territory of Western Fiberglas Supply Co., of San Francisco, to include the entire Pacific Coast and Alaska. Western Fiberglas Supply previously had been distributor for the thermal and acoustical insulation material in the Los Angeles and San Francisco areas.

Western Fiberglas Supply has already opened new offices in Seattle, Wash., and will soon add branch offices in Spokane, Wash., Portland, Ore., and in Alaska. C. A. Leighton is president of Western Fiberglas Supply and Gordon B. Blackwood, vice president and sales manager.

check list

OF PRODUCTS ADVERTISED IN THIS ISSUE

For full details, without obligation, merely check the items below, fill in your name and address, and mail to: Service Dept., SAFETY MAINTENANCE & PRODUCTION, 75 Fulton St., New York 38, N. Y.

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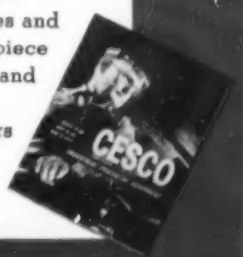

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